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Edited by HENRY C. PEARSON—Office, No. 395 Broadway, NEW YORK.

Vol. XLI. No. 1

OCTOBER 1, 1909.

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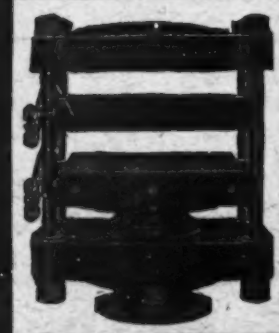
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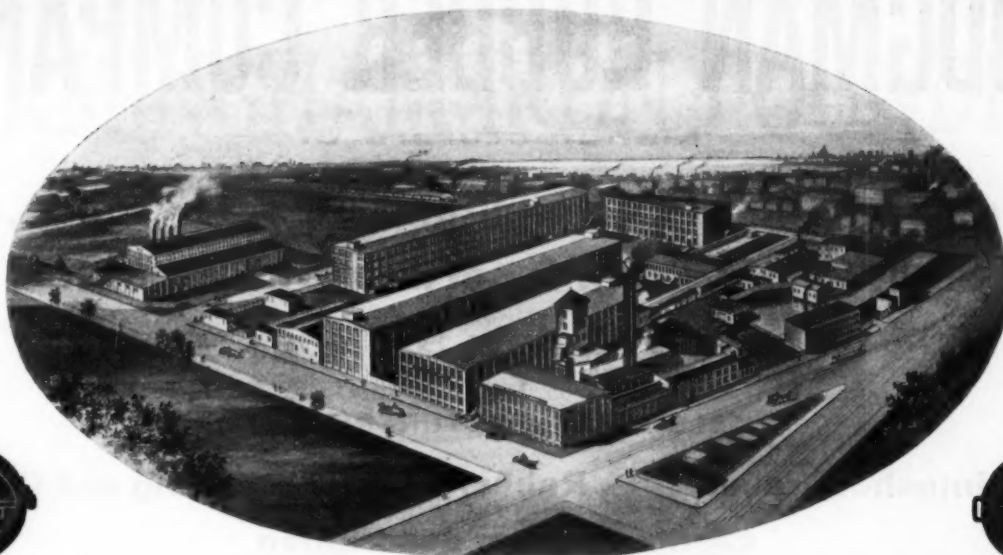
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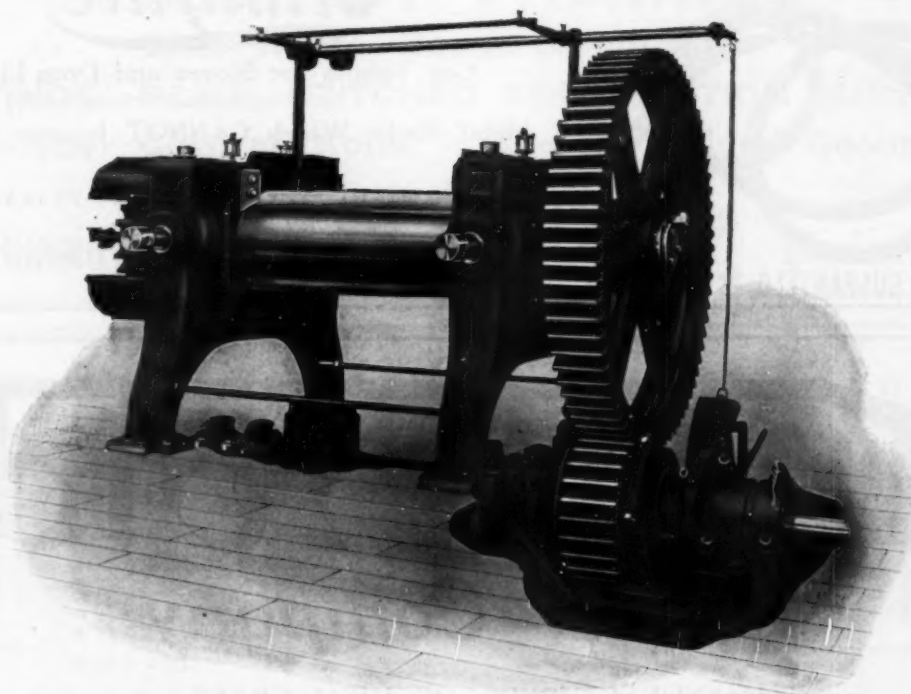
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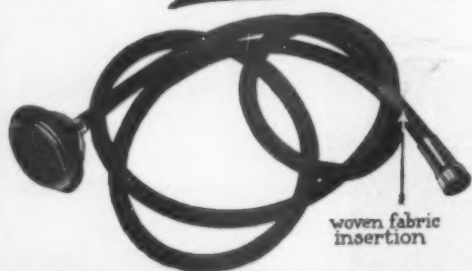
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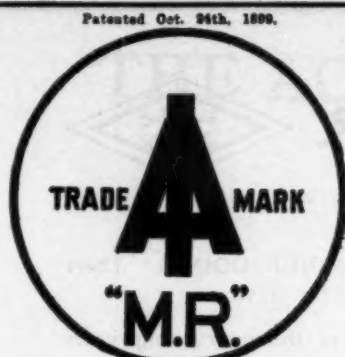
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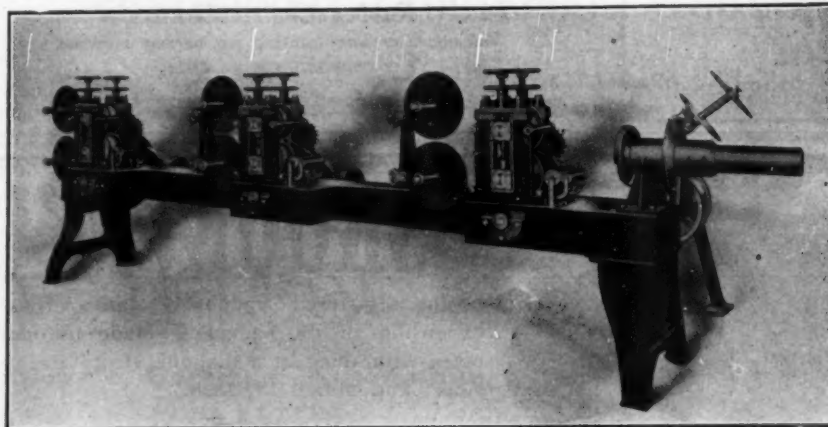
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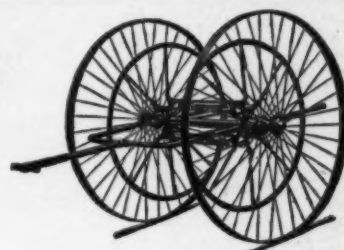
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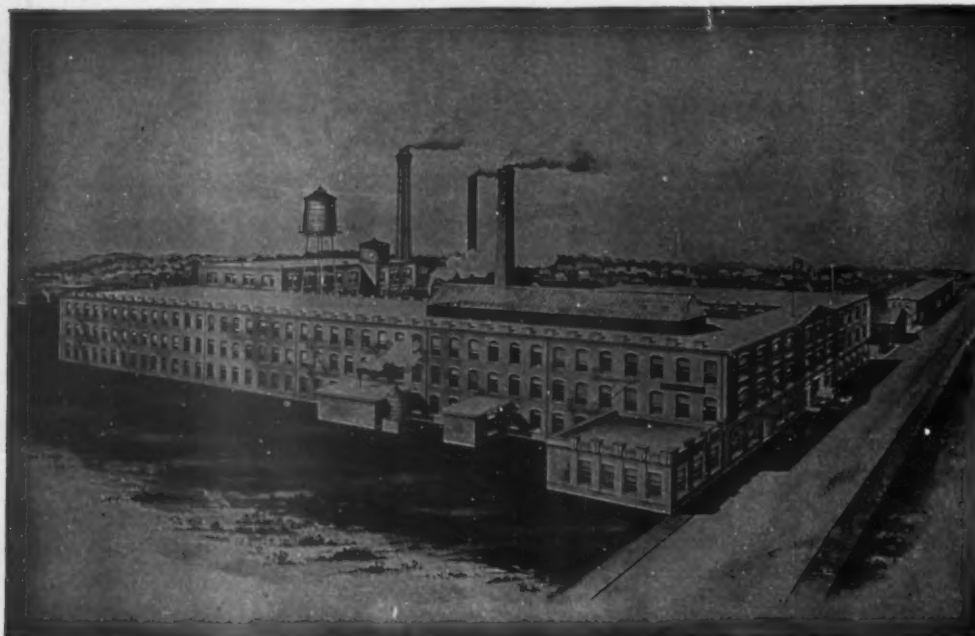
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Every man, woman and child in your town ought to wear rubbers. If they don't, you're not doing your full duty by your town. Why not get a little of that money for keeping their feet dry that they are now paying the doctors for getting their feet wet?

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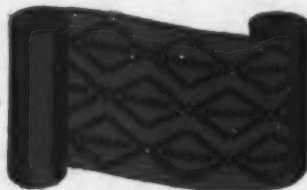
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No Equal.
Will Hold Highest Pressure.

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We would call the attention of those desiring to purchase Fire Hose to the fact that we have in the New York Fire Department, Hose which has been in constant use for over eight years and shows no sign of giving out.

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We guarantee this hose in every respect, and can repair it when damaged.

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GARDEN,

Peerless,
Lakeside,
Red Label,
Crown,
Knicker,
Made any diameter.

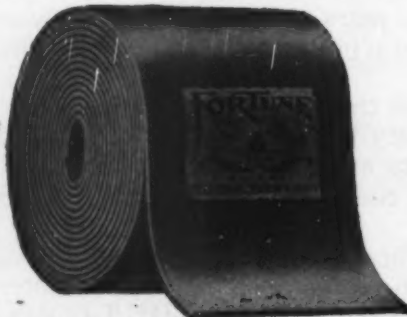


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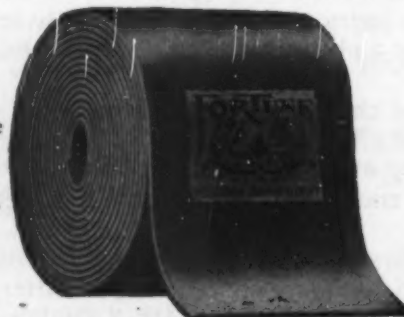


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So far as the manufacturers are concerned, it may be

taken for granted that they will be less confident in future that "when rubber goes up, it must come down again"—at least the next day. As for such speculators as may be left, THE INDIA RUBBER WORLD has never sought to be their representative.

TWENTY-FIVE CENTS TO TWO DOLLARS.

THE story of "The Winning of the West," which won fame for Mr. Roosevelt as an author before he became President, must be taken into account by whoever would understand the advance to \$2 or more for rubber. Mr. Roosevelt, whose personal knowledge of America had been confined to the Atlantic coast, when he became a resident of the Rocky Mountain region, was inspired by the growth of a new Western empire under his eyes to write a book which has helped the nation to feel a sympathy with the spirit which underlies the greatest of successes in colonization.

For nothing that other great powers have done in the name of colonization in modern history has been comparable with the planting of great and populous states in that vast "desert" which such men as Frederick M. Shepard and "Dick" Pease, still active in the rubber trade, used to traverse in stage coaches beyond the Mississippi when going to San Francisco to expand their trade. Mr. Shepard, by the way, can remember when his company bought Pará rubber for 25 cents a pound, and so they might be doing to-day but for "the winning of the west."

Edward H. Harriman, the famous railway manager who died within a month, was only a broker's clerk when the rubbermen named here were discounting the growth of the west by becoming established on the Pacific. Mr. Harriman, impelled by the same spirit, later sacrificed his life in organizing a transcontinental line along the path traveled by the old coaches which had Mr. Shepard for a passenger. James J. Hill, the greatest surviving American railway "king," pins his faith to the growth of the west, and J. Pierpont Morgan, international banker though he be, and trained in a school which scarcely knew an America westward of the Hudson river, has become a great factor in railway development beyond the Mississippi.

The basis of all this is the prosperity of the trans-Mississippi farmer, no less than of the farmer this side of the great river—a class who, within a generation, were appealed to by political demagogues as a mortgage-ridden class. Today they have become lords of the soil, heavy depositors in banks, and the dominant factor in life in many states. These farmers, and the city populations supported by their industry—in spite of the growth of the east—are doubling the purchasing power of the country, for rubber goods as well as other commodities. Where stage coaches of the "Wild West" type ran through uninhabited wastes not so long ago, railways now connect prosperous villages and populous cities, all surrounded

by farms, every one of which calls for some rubber goods every year, even if every farmer does not yet own an automobile.

The rubber goods manufacture still abides in the east—for ever. Akron is very far east to the Pacific coasts—and this condition may long continue, but the product of this industry yearly becomes more widespread, and it is not too much to claim that the first indications of improvement in the rubber trade after the depression of two years ago were revealed in the revival of a demand for goods from what was so recently described in the maps as the Great American Desert.

It is only natural, in view of these conditions, and of the unexampled crops now being gathered, that rubber should go up to \$2. This is an abnormal price, of course, and not to be regarded as permanent, but a tremendous acreage of rubber must be planted yet, and become productive, before the price of 25 cents, which Mr. Shepard remembers, can be seen again. The American farm demand for automobiles alone is enough to prevent an early return to low prices for rubber, for while the new demand for tires is developing makers of them feel obliged to keep supplied with rubber, without regard to prices.

THREE HUNDRED TONS A MONTH NOW.

Cultivated rubber as yet plays no real part in the world's markets, not more than 100 tons having yet come into consumption in any one year.—The Hon. WILLIAM M. IVINS, in *The American Monthly Review of Reviews*, July, 1907.

IN dealing with plantation rubber on any broad scale, the question is not so much what has been, but what is now, and what is reasonably in prospect. Ten years ago Mr. Ivins, for a long time widely informed in relation to crude rubber, could have pointed out that no "cultivated rubber"—not even one ton—figured in the world's markets. But would Mr. Ivins's legally trained mind have argued from this fact that the planting of rubber was impracticable? Yet his widely circulated magazine article of only two years ago, from which a quotation is given above, did much to support the doubters, then still numerous, whether rubber could be produced on a practical basis otherwise than from forest sources.

The present article is not argumentative, but a brief summary of present-day facts. As indicated in the news department of this issue, the offerings from Straits and Ceylon plantations alone, at the London rubber auctions alone, within a single month, aggregated no less than 262 tons. Nor was this the result of an unusual aggregation of plantation rubber. It represented the current receipts from a considerable number of plantations, all making shipments frequently, if not regularly, and all shipping at a steadily increasing rate. For the corresponding period in 1908 the offerings at the London auctions were only 69 tons. A year hence it is not unreasonable to expect that the same plantations—and others nearing the productive period—will be represented by double the amount of rubber now credited

to the Straits and Ceylon month by month. At the same time rubber from other plantations is appearing in other markets than London.

Whatever may have been the case when Mr. Ivins's article was written, cultivated rubber plays a very "real part in the world's markets" today. The mere quantity is a factor which cannot be ignored, but the trade is confronted with a much broader consideration. Whether manufacturers, importers and brokers have considered the question fully, it has made an impression in the producing centers of the Amazon and in Africa—that the future of their trade depends to no small extent upon their capacity to produce rubber which will rival in cleanliness the plantation grades from the Far East. Otherwise, the industry will demand plantation rubber. It is true that THE INDIA RUBBER WORLD has sounded a warning against the feverish promotion of rubber plantation companies. But what has been objected to in these pages is not the planting of more rubber; the thing to be guarded against is putting money into companies formed primarily for other purposes than rubber cultivation.

RUBBER IN FIRE FIGHTING.

THE use of india-rubber in connection with apparatus for fighting fire deserves largely more attention than it receives, as a rule, at the hands of those who attempt to show what becomes of the world's large and growing production of this important material. One hears on every hand that rubber costs more today than formerly because of the increasing production of tires, which appears reasonable in view of the great number of automobiles to be seen everywhere. Or the increasing use of rubber for insulation purposes may be suggested by those familiar with the growth in the uses of electricity. And so on, through a long list of rubber-consuming interests. But who has written anything on the manufacture of fire hose as a factor in the constant drain on crude rubber supplies?

Important and comprehensive as were the pioneer works by Goodyear and Hancock—dealing with so many practical applications of india-rubber already accomplished or foreseen—one looks in vain through these volumes for the slightest suggestion of rubber fire hose. It was not, indeed, until after these fathers of the industry had passed away that rubber hose came into use in connection with fire department apparatus. Only half a century ago the world's chief dependence for putting out fires was still the time-honored practice of emptying pails of water upon the flames, except that in larger towns pumping "engines" were employed to convert the water into streams which would carry farther than water from pails. The first such engines forced the water through short metal pipes, which came to be succeeded by leather hose, and this in time by hose made of linen or cotton and rubber.

The latter development marks the beginning of fire fighting upon which dependence could be placed—of fire

insurance at economical rates—of conditions under which great cities could be founded hopefully. Through all the stages of modern development of means of contending with fires in cities the rubber hose manufacturer has contributed largely to the successive steps in advance which have been attained. The steam fire engine seemed a wonderful invention, contrasted with the old hand truck, and the work it did stimulated the growth of cities, but that work would have been impossible without rubber hose. But the present-day steamer is a mere pygmy—a squirt gun—compared with the still later high-pressure systems which the "skyscraper" has called into use. Here again, rubber hose figures: rubber hose such as the last generation never dreamed of, hose without which there could be no high-pressure systems, and without high pressure the skyscraper cannot endure.

What the rubber tire maker has done for the automobile the rubber hose maker has done for protection against fire. This is not the only debt of the fire departments to the rubber trade, however. The resilient tire has become a necessity for wheeled fire apparatus. The motor fire engine is driving out every other type, by reason of the prompter service possible, the fact that the motor serves also as the means of propelling streams, and owing to the greater durability of machines equipped with rubber tires as compared with rigid steel.

The rubber industry, as a whole, while it may not welcome the increasing cost of rubber, may console itself with the thought of having contributed in so many ways to the world's needs—the hose industry not being the least in importance. And rubber planters have only to consider the inevitable growth of fire department systems to gain a new incentive for the encouragement of their work.

CREATION OR EXTRACTION.

IT is not generous or charitable to consider all of the geniuses who "make" crude rubber as frauds. Dishonesty presupposes a knowledge of and an abandonment of the right. The rubber maker is often honest but without a knowledge either of india-rubber or exact English. He extracts from a bastard gum by certain chemicals a proportion of rubber. Delighted with the result, he announces that he makes rubber. But his work is not creative. He is not a parent. He is simply a midwife. What he accomplishes may be of value or not. It is honest, of course, but he is an extractor not a maker.

THE THANKS OF THE RUBBER TRADE are due to the esteemed New York Times for the information that crude rubber prices are raised by the directors of the United States Rubber Co. We had supposed that, in view of the large consumption of crude rubber by this company, the interest of the directors would lie in the direction of lower prices. The Times's information cannot be ignored, however, particularly when it gives evidence of possessing access to such special facts as this statement from its columns indicates: "As early as three years ago automobile rubber orders in advance were sufficient for more than six times the possible rubber output. The rubber famine was foreseen years ago, and rubber tree planting began in the Pará district of

Brazil at once." The *Times* heads an article "Rubber Prices Still Soar." The sides of the *Times's* rubber editor must be still sore from laughing over how he has outdistanced all competitors in sizing up the rubber market situation.

THE DISCOVERY OF THE NORTH POLE has given rise to a controversy between rival explorers as to their respective honors in the matter, all of which is outside the scope of THE INDIA RUBBER WORLD. It may be permitted, however, to express satisfaction that the new area thus brought to the knowledge of the world can hardly be utilized by the professional rubber-planting promoter as a field for mapping out new plantations.

THAT VERY EXCELLENT AND USUALLY ACCURATE magazine, *The Automobile*, under date of September 16, not only skids badly but completely turns turtle when it comes to a description of the preparation of rubber for tire manufacture. After a preliminary, in which it says that the process is not a long one, or complicated, it goes on: "The crude rubber is cleaned, sulphur added to it, and then baked into a unit by the application of heat. The cleaning process is called curing and it is in this part that the acid is used." The truth is, the cleaning process is called washing; the curing process is called baking or vulcanizing. In the process of curing by heat no acid is ever used.

IN THE PAST THE OXIDIZED OILS, the cheaper gums, the asphalts and earth waxes have been of great use in rubber compounding. Where rubber is used with either a fabric insertion or backing, which precludes stretch, but leaves plasticity, they have all been useful in displacing a certain amount of crude rubber. So much has been done in adopting various plastics to rubber compounding that one wonders if much more cannot be accomplished. Suppose, for example, cellulose could be produced in such form that it would make a cheap, strong, lasting friction, what a wide use it would find and what a lot of rubber it would displace. With crude rubber higher than before, is not some such product about due?

SUCCESSFUL RUBBER PAVEMENT.

JUST to show the wonderful lasting quality of india-rubber in pavements, it is interesting to note a Scottish instance. Thirty years ago the North British Rubber Co., Limited, paved the whole sidewalk in front of their warehouse on Princes street, Edinburgh, a very busy thoroughfare, with rubber. The walk was 12 feet wide and the store front 50 feet. About a month ago, to carry out their agreement with the city, as they were vacating the premises, the rubber pavement was removed and regular city pavement substituted. Careful examination of the rubber failed to detect the slightest sign of wear. The surface was no where oxidized and it seemed to be absolutely unaffected by the elements or by the millions who had passed over it.

THE FIRST ATLANTIC CABLE.

THE celebration of the centennial of the laying of the Atlantic cable of 1858 was the occasion of a paper of some length on this subject, in *The Electrical World* (August 22, 1908), by Mr. William Mayer, Jr., which has lately drawn a letter of criticism from Mr. Charles Bright. To the latter Mr. Mayer makes reply in *The Electrical World* (August 19, 1909), in an article filling more than four pages. It does not appear that the two distinguished contributors named have done anything to settle the question whether England or America is entitled to greater credit for the first accomplishment of transatlantic cable laying. In other words, Mr. Mayer, the American, and Mr. Bright, the Britisher, has each convinced himself on this point, and

not each other. The controversy is hardly one for review in these columns, but Mr. Mayer's last paper is of special interest from his liberal quotations from an important publication not often seen nowadays—

"Report of The Joint Committee appointed by the Lords of the Committee of Privy Council for Trade and the Atlantic Telegraph Company to inquire into the Construction of Submarine Cables; together with the Minutes of Evidence and Appendix. Presented to both Houses of Parliament by command of Her Majesty. London: Eyre & Spottiswoode, Printers to Her Majesty's Stationery Office. 1861. [Paper. Fol. Pp. XLIV + 519 + plates.]"

WHITING FOUND IN MEXICO.

THE discovery is reported of an important deposit of whiting, in the Mexican state of Campeche. The story is that it was found while a well was being drilled on a henequen (sisal) plantation on the Champton River, eight miles above the town of Champton. For developing this discovery the International Whiting and Fibre Co. has been incorporated, at Mobile, Alabama, with \$600,000 capital. W. H. Bell, of Vicksburg, Mississippi, is president, and J. T. Burke, of Mobile, vice-president. A refining plant has been established at Mobile, at a cost of \$10,000. THE INDIA RUBBER WORLD is advised:

"From expert tests, we have the best whiting for the composition of rubber that has ever been used, as its extreme natural fineness and silkiness gives it a density that other similar articles on the market are unequal to. Our deposit contains an approximate amount of 2,000,000 tons, very accessible to good and easy transportation."

Mr. Bell is quoted by *The Mexican Herald* as saying: "The product differs from the English whiting in that it is found on our property in a decomposed state and is almost fit for use at the time it is taken from the ground. The English product is found in the form of a very hard limestone, and thus the cost of refining and treating it is far more than will be the cost accruing to our work."

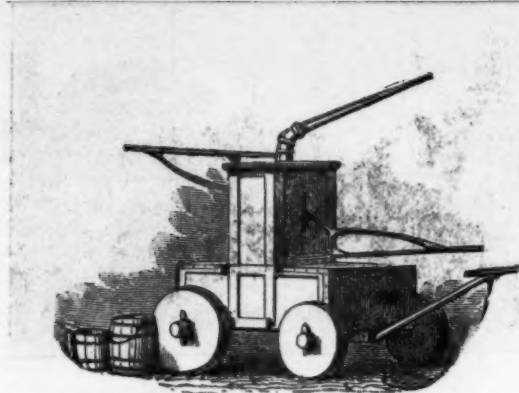
The United States, during the fiscal year 1906-07, imported 1,858,339 pounds of whiting and Paris white, mainly from England and France. The duty was $\frac{1}{4}$ cent per pound, which rate is maintained under the new Tariff act.

RUBBER FACTORIES IN AUSTRALIA.

THE Barnet Glass Rubber Co., Limited, of Melbourne, have erected new and larger buildings, to enable them to handle conveniently their growing trade. The new premises, situated in Swanston street, Melbourne, have been laid out in the most modern style. The firm referred to were the pioneer rubber manufacturers in Australia. As B. Glass & Son they had been interested in the india-rubber trade for twenty years, including the manufacture of mackintoshes from imported materials, when some ten years ago [see THE INDIA RUBBER WORLD, December 1, 1899—page 80] they opened a factory for proofing cloth and for making various lines of rubber goods, including bicycle tires. The company to-day are making tires of their own, in addition to which they are agents for the Michelin tires. There are now two rubber manufacturing companies in Australia, the Dunlop company having entered the field a little later.

Figures are not available showing the imports of crude rubber into Australia, but these details may be of interest. Exports from Great Britain to Australia for five years have been:

Years	1904	1905	1906	1907	1908
Pounds	394,688	347,488	616,448	681,184	706,832
Ceylon exported direct to Australia in 1908 over 39,000 pounds of home-grown rubber.					



NEW YORK FIRE ENGINE, 1785.

[One of the first made in America. Built on the English model, by Jacob Boome.]



"AMOSKEAG" STEAM FIRE ENGINE (DOUBLE PLUNGER), 1869.

[The first manufacture of steam fire engines in America, begun at Manchester, New Hampshire, in 1859.]

Rubber Fire Hose Forty Years Ago.

A DISTINCT new epoch in municipal fire fighting was just starting forty years ago—a step in progress with which is connected one of the most interesting chapters in the history of the india-rubber industry. The subject is brought to the mind of the writer through his having come across files of a journal devoted to fire department interests* which was started at the beginning of 1869 and went out of existence on December 31 of that year. Hence the reference to a period just forty years ago.

The Metropolitan Fire Department, in New York, and the Metropolitan Fire Brigade, in London, had recently been organized, both based upon practically the same ideas, the principal of which was the substitution of paid firemen for volunteer services. The merits of the two systems were hotly discussed, and paid departments came into vogue only gradually. They were adopted in Brooklyn and in Philadelphia during 1869, and wherever adopted the change made easier the introduction of improved fire apparatus, in which rubber hose was to prove so important a factor.

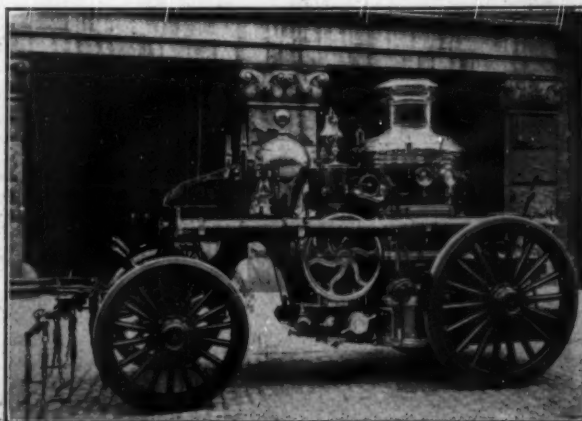
"Not the least among the progressive steps made during the past few years," said this fireman's journal in 1869, "has been the substitution of the steam fire engine in the place of the comparatively inefficient apparatus formerly in use." At that time steam fire engines had been in the market for just ten years, the largest manufacturer having produced only 328 machines, less than 200 designed to be drawn by horses and the others, of lighter weight, to be drawn by men. It is worth quoting here that in 1869 Captain Eyre M. Shaw, head of the Metropolitan Fire Brigade of London, visited the United States on a tour of study, and on his return was reported by the London press as regarding it "a very singular and unaccountable fact" that the use of hand-worked engines was being ignored in American cities, instead of being retained for use in connection with the steam engines. London then had 25 steam and 80 hand-worked engines.

An illustration on this page relates to the first, or one of the first, "fire engines" built in New York; formerly they were all imported. This particular engine was the first used in Brooklyn, and was built in 1785, at a cost of £150 [= about \$750]. It differed little in appearance from the first engine used in New York, imported in 1730, and differed less in principle from the fire-fighting machines in vogue up to the era of steam engines. These early engines were operated without any hose. Water was poured into them from buck-

ets, and forced out through a metal pipe by means of a pump. The apparatus illustrated had 180 gallons capacity and a 6-foot pipe with $\frac{3}{4}$ -inch nozzle, through which water could be discharged 60 feet. It was 76 years before Brooklyn had a steam engine.

Leathern hose or pipes had been used earlier in London. An enactment in Queen Anne's reign (1708) mentions such hose in connection with fire apparatus, but probably little of it was used in America until a century later. But by 1869 a vast amount of leather hose was employed by the 120 fire departments in this country. No less than eight firms advertised leather hose in the journal under review. When Brooklyn's paid fire department took shape an official report says that the hose—leather—"was found to be in a very questionable condition. Whether new or old, merely nominal attention had been paid to the greasing or repairing of it, and instead of wearing out in actual service much of it was in a form to fall to pieces from corrosion and neglect." No doubt this would have applied to leather fire hose in general.

The New York department took up rubber—or, rather, "combination"—hose in earnest just before 1869. By August of that year it had purchased "over 55,000 feet" of the patented mildew-proof hose of the "Maltese Cross" brand, the manufacturers of which were beginning to find a market for



"AMOSKEAG" STEAM FIRE ENGINE, 1909.

[These machines are now built by International Power Co. (Boston). The machine illustrated has rubber tires.]

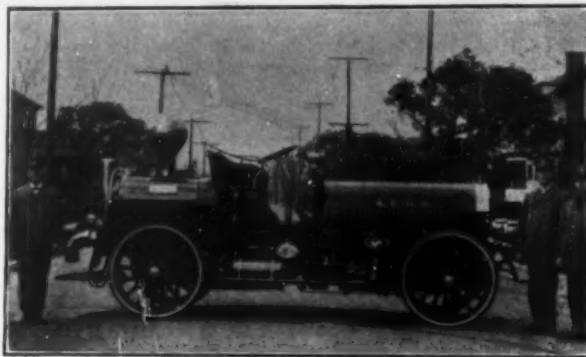
*The Fireman's Journal, edited first by Fred J. Miller, and later by William C. Lewis, No. 34 Liberty street, New York.

it elsewhere as well, selling on an average, it was stated, 1,000 feet a day. This product was advertised as "the only hose that will stand the great pressure and severe tests of steam fire department engines without bursting or sweating." The New York board of fire underwriters recommended this hose and it was adopted by the United States navy department.

Other rubber manufacturers were not slow in coming into the market from this time on. The superiority of the steam fire engine was so marked that cities and towns ceased to buy any other, while the leather hose had to give way to rubber or "combination" brands on the modern engines. There were disputes over the hose patents naturally, but they need not be detailed here. The various makers advertised in the fireman's paper were the Gutta Percha and Rubber Manufacturing Co. and the Combination Rubber Co., both of New York—combination hose; New York Belting and Packing Co. and the National Rubber Co.—rubber hose; Post, Herkner & Co.—rubber hose and rubber cotton-lined hose; James Boyd & Co.—patent cotton hose; and the Grenoble hemp fire hose.

James Boyd & Co., by the way, were still offering leather hose, of which they had been makers for 50 years. C. M. Clapp & Co., so long prominent in the Boston rubber goods trade, advertised both leather and rubber hose. Among other advertisers not already named here were A. C. Eddy & Co., of Providence, and the Rubber Clothing Co., of New York, offering firemen's rubber coats and caps. Two other rubber men remain to be mentioned in these reminiscences. The Allerton Iron Works Manufacturing Co., of Naugatuck, Connecticut, were beginning to build fire engines, and George M. Allerton, Sr., of the "Goodyear Glove" company, was treasurer of this corporation, and Edward L. Perry, still engaged in the rubber industry, contributed an article on the hose patent situation.

The pages of this paper devoted much space to new inventions, in a field then practically new—improvements in engines, hose couplings, nozzles, rubber respirators, and so



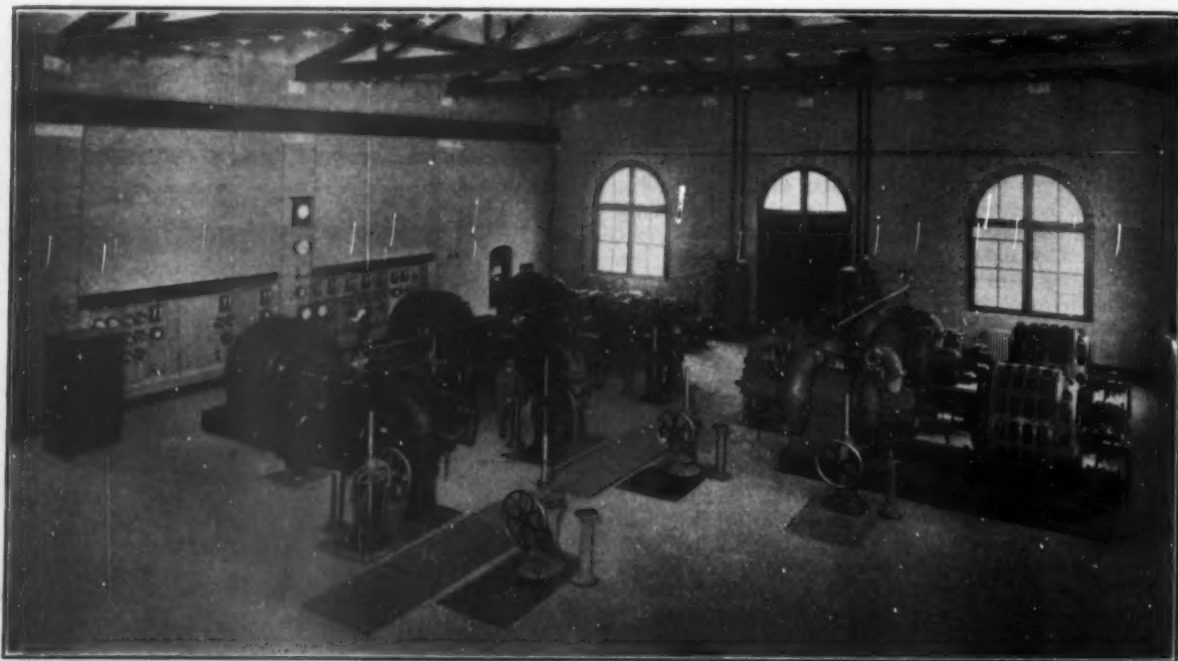
AN AUTOMOBILE FIRE ENGINE, 1909.

[This is the "Pioneer" type, made by the Waterous Engine Works Co., St. Paul, Minnesota.]

on. John Raddin's patent elastic wheel is recommended for fire engines and velocipedes (bicycles). It was constructed with a rubber cushion at either end of every spoke—one cushion at the hub and the other inside the felloe, the tire being steel, of course. By the way, several firemen's clubs were mentioned as having formed velocipede clubs.

C. D. FROST.

An official of the Michelin Tire Co. stated recently that high speed road and track contests have done more than anything else to bring pneumatic tires to their present high state of efficiency. He referred to the well-known fact that automobiles had been perfected by developing their weak points in open competitions of all kinds, to remedy which manufacturers were forced or encouraged to improve their product, and stated that the same spirit of rivalry and the same desire to produce the best had in the past stirred the tire makers to equally serious effort.



NEW YORK'S LATEST SUBSTITUTE FOR THE FIRE ENGINE SYSTEM—HIGH PRESSURE, 1909.

The Coming Rubber Congress at Manaus.

IN connection with an announcement of a "Congresso Industrial Seringueiro," to be held in the Acre district, a short time ago, THE INDIA RUBBER WORLD (August 1, 1909—page 397), mentioned that a rubber congress to be held later at Manaus was also in prospect. It is too early yet to present here a report of the meeting in the Acre during August. But that the merchants and the producers of rubber up the Amazon are deeply interested in the improvement in industrial and commercial conditions in their region is indicated by the scope of the preparations under way for the Manaus conference, which has been called under the auspices of the Associação Commercial do Amazonas. The objects of the proposed meeting and the tentative programme may best be shown by giving here in full a translation of a communication appearing in the important newspaper, *A Provincia do Para*.

* * *

"In accordance with the provisions of our by-laws, we are going to hold a Commercial, Industrial and Agricultural Congress in this city in February, 1910, one destined to be an eloquent exponent of the Amazon basin, both as regards the interests of Brazil itself and the countries bordering on the state of Amazonas.

"Both the intervening distances separating us and the existing physiographical conditions seemed to make a work of this magnitude impossible of realization, a work that has always been hampered by rivalry and undue caution.

"But everything is now different. We have grown so large that we no longer fear to be absorbed by others. Each one has its own sphere of influence. In these latter days a wise foreign policy affords Brazil the opportunity of peacefully delimiting its extreme frontier lines. Finally, new treaties of commerce and navigation complete the patriotic and enduring work to which the second Baron do Rio Branco dedicated his activities and talents as a statesman, in removing the last traces of our ancient controversies.

"There is therefore no reason why Pará, Matto Grosso, and the cis-Andine region, embracing Peru, Colombia, Bolivia and Venezuela, should not also be represented at our congress. It is manifest that when brought face to face in this way they cannot but be moved by the desire of knowing one another better, of strengthening more firmly their community of interests, of studying and solving in unison their economic problems, their native products, their industries, agriculture, and commerce, beset with surprises and discouragements.

"The honor of presiding over the congress falls by right to his excellency, the governor of the state of Amazonas. The Federal government, Pará, Matto Grosso, and each of the neo-Spanish countries above mentioned will undoubtedly be officially represented at the congress. There will be a representative of the National Agricultural Society, and one from the Pará Agricultural Society. We count upon the attendance of the commercial associations of Pará, Parintins, and Itacoatiara, the Amazon Agricultural Society, the Gœldi museum, the Chamber of Commerce and Geographical Society of Iquitos, the Association for Geographical and Scientific Study of Rivera Alta, the Geographical and Colonial Development Society of Cobija (Bolivia), the state municipalities and their superintendents, the proprietors of rubber plantations, the regular press, and above, all the national and foreign journals especially dedicated to the subject of India-rubber, the one question which will be first and foremost at this congress. In furtherance of this purpose there will be a small exposition held in connection with the congress, with

a garden of practical demonstration, of the planting of the *Hevea Brasiliensis*.

"In subsequent congresses such subjects as cacao, the nuts, food plants, and sugar and cattle industries will be taken up.

"From the instructions published below it will be seen that the three groups of themes to be discussed are commerce, the extractive industries, and agriculture. Among them are comprehended, so far as possible, the elements requisite for the study and solution of the principal questions that so fundamentally concern the economic life of the Amazonian regions.

"We are confident therefore that the able editor of the *A Provincia do Para* will lend his assistance in our work of seeking closer regional affiliation, by opening the columns of his well edited journal to the propaganda, and to giving a clearer understanding of the objects of our congress of 1910.

"JOAQUIN GONCALVES D'ARAÚJO, Vice-President."

"Manaus, July 6, 1909."

* * *

[The paragraphs which follow constitute a circular which forms part of the communication above quoted from.]

THE sessions of the Regional Congress will continue for four days—February 23 to 26, 1910. The opening session will be on the 22d and the closing one on the 27th. The following subjects will be discussed:

Commerce.—Development of commerce in the extreme North of Brazil and in the cis-Andine neo-Spanish territory; statistics and tables of imports and exports; the question of long haul freight, coast and river steamers; what changes are to be made in the existing relations between financial backers, producers, and exporters; what would be the best way of establishing among the factors above mentioned a system of reciprocal rights and duties, assuring free and independent action to each one of them; what would be the advantages of "warrants" in this respect; mortgaging the crops; the discounting of bills of exchange at a moderate rate of interest, the syndicates, etc.; the abuse of credit, ways of minimizing its bad effects; retrospective glance at its influence in commercial crises in the Brazilian Amazon, as well as abroad; is any agreement possible between the buyer and seller in the way of rules governing the acceptance and payment of drafts, accounts current, and the legalizing of merchandise purchase-memos. at maturity; long haul river and coastwise navigation; measures to be taken for cheapening freights and the reaching of reasonable understanding between carriers and ship owners; how far can the protection of the government and the intervention of private capital go in this respect; will not the clearing of river courses and channel cutting solve in a large measure the scarcity of freight and the problem of more rapid river communication; methods of developing the merchant marine and the coastwise steamer traffic in the Amazon valley.

Products of the Soil.—Will planting perhaps be the surest way of making solid and enduring the primacy of the Amazon rubber in the market of the consumers? What methods should be employed to demonstrate to producers that the value of their property will be increased more by planting rubber, thus rendering their profit more certain and less subject to speculation in the markets of the consumers? Are there any new methods of coagulating and perparing rubber? Is there any advantage in the replanting of caoutchouc? Is the area devoted to this purpose still of great extent? What is the approximate area in the three states of the Amazon, the territory of Acre and the cis-Andine neo-Spanish terri-

tory, of the *seringas* (rubber estates) not being worked? Are the causes that have prevented its development up to the present time of an economic or physical nature?

Agriculture.—Causes that retard another flourishing state of agriculture in the Amazonian regions; methods to adopt for restoring old plantations; what zones are best adapted to diversity of cultivation without detriment to products of the soil, and to what extent can they be made auxiliary to the cheapening of these latter; will the cultivation of food plants result in a falling off of hands for the rubber harvest; would not a proper division of time and labor in the harvesting of rubber facilitate the cultivation of food plants, contributing at the same time in this way to the value of the soil and the benefit of the rubber plantations.

TELEGRAPHING ON THE AMAZON.

THE president of Brazil on July 29 signed a decree authorizing the Amazon Telegraph Co., Limited, to duplicate their cable between Pará and Manáos. The expense is to be borne by the company alone, in consideration of the concession being extended a further 20 years, after which the system reverts to the government, without indemnification.

The Amazon cable—1,326 miles in length, including branches—has proved of great advantage to the rubber trade since 1896, when it was first put down. The service has been intermittent, however, and the frequent breaks, coming without warning, were often disturbing to the trade, to say nothing of the embarrassment of the management and the disappointment of shareholders unable to realize dividends.

The Amazon company was registered July 5, 1895, with £250,000 [= \$1,216,625] capital. The cable between Pará and Manáos was constructed and laid by Siemens Brothers & Co., Limited (London), and turned over to the company in working order for £211,000 [= \$1,026,831.50]. The company were to receive a government subsidy of £17,125 [= \$83,338.81] annually for 20 years. There have since been authorized debentures amounting to £350,000 [= \$1,703,275], most of which have been issued—for extending the cable to other points than Pará and Manáos, for making repairs, and the like. The first year for which the accounts showed a net profit was that ending June 30, 1905, but the earnings were only credited against a heavy debit balance, and the company has never yet paid a dividend. The difficulties encountered in laying the Amazon cable were pointed out in an address by Mr. Alexander Siemens, head of the cable laying company, reported in THE INDIA RUBBER WORLD August 10, 1896 (page 329).

The hope is now entertained that, with duplicate cables, the failure of one wire at any time will prevent an interruption of communication, which stops the income of the cable company while interfering with the rubber trade.

FRENCH ENTERPRISE IN THE AMAZON REGION.

IN AN official report, the United States consul general at Rio de Janeiro refers to the steady increase in the amount of French capital invested in Brazil. What is of particular interest is the assertion that although concessions for important public improvements have been granted lately to an eminent American engineer, he has been unable to find in the United States the necessary capital for working them. He went to France, therefore, for funds, which he obtained on the condition that contracts for actual construction work should be given to French companies and French materials used. The consul general says: "Having furnished the money for the enterprises, French investors are disposed to favor French methods, materials, machinery, and manufactures generally, and this is already having a marked effect upon Brazilian imports. Such enterprises will draw upon France indefinitely in the future for their supplies." Among the improvements referred to is that of the port of Pará and to a certain extent the construction of the Madeira-Mamoré railway.

NEW TRADE PUBLICATIONS.

THE latest issue of THE MANHATTAN RUBBER MANUFACTURING Co. (Passaic, New Jersey), is a special catalogue of Fire Hose, embracing the leading brands of fire and mill hose made by them. Among the specialties listed is a hose for chemical engines and a line of fire-extinguisher tubing. Such accessories as play pipes, ring couplings, and the like are also illustrated. [5" x 7½". 24 pages.]

THE importance of the rubber stamp trade and the allied businesses is suggested by the size and variety of contents of Catalogue No. 34 issued by THE R. H. SMITH MANUFACTURING Co. (Springfield, Massachusetts). Here are illustrated vulcanizers, molding presses, and accessories, in great number, planned for large and small establishments. A number of pages are devoted to specimen faces of the metal-bodied rubber type which is a specialty with this firm. [6¼" x 9¾". 176 pages.]

THE BUFFALO FOUNDRY AND MACHINE Co. (Buffalo, New York) send out a novel-appearing advertising booklet having the outward appearance of a bank pass book. The point of the contents is that there is economy in the purchase of the products of this company, including their vacuum dryers, which are recommended for use in rubber factories. [3¼" x 8¾". 28 pages.]

NEW JERSEY CAR SPRING AND RUBBER Co. (Jersey City) issue an illustrated catalogue of Rubber Mats and Matting, which relates to an interesting line of such goods, which is the result of many years of experience. [4¼" x 6¼". 48 pages.]

THE MASON REGULATOR Co. (Boston) issue their general catalogue No. 58 of Mason Regulating Appliances, for use in connection with every form of steam equipment, including pumps; also Mason balance valves and Mason steam pumps. The catalogue is profusely illustrated. [6" x 9¼". 178 pages.]

ABBÉ ENGINEERING Co. (New York) issue their Catalogue No. 4 of Pebble Mill Specialties for fine grinding and thorough mixing. Several of their mills have been used with success in connection with grinding guayule, and also waste rubber. [6" x 9". 62 pages.]

THEODORE HOFELLER & Co. (Buffalo, New York) have issued a Private Telegraph Code for the use of their customers in the waste rubber trade. They have attempted to send one to everyone with whom they have had business relations, but if any such should not have received one they are invited to apply for it. [3¼" x 5½". 60 pages.]

WALKER SONS & Co., LIMITED (Colombo and Kandy, Ceylon), issue an elaborate illustrated catalogue of Pará Rubber Appliances, including tapping knives, coagulating machines, rollers and other items of equipment for the preparation of rubber on plantations. [8¾" x 11". 20 pages.]

THE BRISTOL Co. (Waterbury, Connecticut) send their Bulletin No. 103, devoted to Bristol Recording Instruments for various purposes. These devices have found wide use in rubber factories. [8" x 10". 16 pages.]

ALSO RECEIVED.

BARRETT Manufacturing Co., New York and Philadelphia.—Tarvia. [For preserving roads and preventing dust.] 40 pages.

J. K. Krieg Co., New York.—Die Blocks, Mallets, Dicing Out Machines. 4 pages.

W. H. Salisbury & Co., Chicago.—A Wireless on Rubber Belting. 8 pages.

E. J. Willis Co., New York.—Reduced Prices on Automobile Supplies. 12 pages.

Hubert H. Ward & Associates, Cleveland, Ohio.—The Seaton Spring Wheel. 4 pages.

Hagstrom Bros. Manufacturing Co., Inc., Lindsborg, Kansas.—Hagstrom Inside Tire Sleeve. 16 pages.

Auto-Tire Vulcanizing Co., Lowell, Massachusetts.—Auto Tire Vulcanizing Machines. 6 pages.

A PARTY of students from London made a tour of Germany during July, under the auspices of The Institution of Electrical Engineers. A number of important works were visited, particularly those of Allgemeine Elektrizitäts Gesellschaft (Berlin).

Notes on Rubber Cultivation.

PLANTED ACREAGE IN CEYLON AND MALAYA.

THE current edition of the "Ceylon Handbook and Directory," compiled annually by *The Ceylon Observer*, estimates the area under rubber in the colony, at the middle of 1909, at 184,000 acres, against 180,000 acres one year previously. From returns supplied by plantation managers it appears that 131,800 acres are planted to rubber alone; the additional acreage is arrived at by taking into account the rubber interplanted with 67,056 acres of tea and 18,698 acres of cacao, on the same basis of estimating employed in the past. In the "Handbook" for 1898 rubber planting was represented by an estimate of 750 acres; by May, 1901, they estimated 2,500 acres, while the return to the middle of 1904 gave an equivalent of 11,000 acres. Subsequently planting went on very rapidly until within a year, since which a halt seems to have been made. The 131,800 acres planted to rubber exclusively, if assembled in one tract, would cover just 206 square miles, affording a most striking example of what can be done in the way of forming an artificial forest.

Still larger is the acreage under cultivated rubber in the Federated Malay States. The last report issued by Mr. J. B. Carruthers, director of agriculture in the States, before taking leave for his new official position in Trinidad, gives the planted area at 241,138, while the number of planted trees is estimated at 37,500,000. The average yield per tapped tree all over the Malay peninsula is stated to have increased from

1 pound 6 ounces in 1907 to 1 pound 15¾ ounces—a gain of 11 per cent. The average yield of tapped trees in the state of Negri Sembilan was 3 pounds 2 ounces, without regard to age. Some seventeen year old trees at Parit Buntar are mentioned as having given a yield of 28½ pounds in one year.

"CASTILLOA" RUBBER BY THE CENTRIFUGAL PROCESS.

THE rubber delivered by the Leshner centrifugal machine, now in use on La Zacualpa plantation, in Mexico, is in the form of biscuits, which would readily be taken for typical fine Para biscuits. When one of them is cut in two it shows a very densely coagulated light colored surface, with a suggestion of thin layers, such as are produced by the smoking process. The rubber is very clean and tough, and the outside surface, where it is exposed to the air, has a mahogany color instead of the black that *Castilloa* so often acquires.

LA ZACUALPA PLANTATION CO. NO. 2.

THIS company, though incorporated under the laws of California, is in a sense an English company. A considerable amount of its capital is held in Great Britain, and it has a London director, Mr. Ashmore Russan. The two La Zacualpa companies (No. 1 and No. 2) and one other are the only three Mexican rubber plantation enterprises mentioned in the "Rubber Share Handbook," which *The Financier and Bullionist* has lately brought out.

The first La Zacualpa Rubber Plantation Co. was incorporated ten years ago—September 8, 1899—when the cultivation of rubber



IMPROVED DEVICES FOR USE IN CONNECTION WITH *CASTILLOA* RUBBER.

[Just as the cultivated *Hevea* has called for and developed certain types of tools for gathering rubber, so now as the producing stage is being reached does the *Castilloa*. One of the illustrations given herewith show a light 24-foot ladder that one man can handle, and, once placed, clasps the trunk of the tree so that it cannot slip or fall. Another production is a rotary knife run by power that does excellent work. The motor shown in the illustration is gasoline, but the plan is to have a little electric motor to do the work of driving the knife. The same inventive mind that has produced the ladder and the power knife has also evolved two hand knives, one for the regular tapping, the other for opening first cuts. These views are supplied by Graves & Graves Co. (Boston), who are engaged in planting *Castilloa* rubber in Mexico.]

was in its infancy, and few persons had much experience regarding it, particularly with *Castilloa*, the rubber tree of Mexico. The La Zacualpa interest has been persistent, however, and their planting has been extended steadily, until today, as THE INDIA RUBBER WORLD is informed by the president of the company, the three La Zacualpa plantations embrace 18,500 acres [=29 square miles], and the first plantation "this year will produce fully 100,000 pounds of rubber."

CRUDE RUBBER AT THE MINNESOTA FAIR.

PROBABLY the first exhibit of crude rubber at an agricultural fair in the United States is that of the St. Paul Tropical Development Co. at the Minnesota State fair this year. The company's plantation is located in Mexico, but is owned by American capitalists and directed from the city of St. Paul.

LA ESPERANZA RUBBER CO. SOLD.

THE entire property of La Esperanza Rubber Co. offered for sale at public auction at Providence, Rhode Island, on August 30, was purchased by Carleton Hale, a creditor of the company. The property embraces 600 acres in the canton of El Maison, state of Vera Cruz, Mexico, purchased for the company by Mr. Hale in March, 1898, immediately after which the planting of rubber was begun. The principal buildings on the estate—known as Hacienda de Tula—were burned February 8, 1909, including a ton or more of fine creamed rubber, prepared under a method devised by Mr. Hale, who has retained an interest in the company from the beginning.

RUBBER PLANTERS IN JAVA ORGANIZE.

THERE was organized at Bandjar on July 20 a Vereeniging van Rubberplanters, which is stated to have a membership of 40 planters in the western part of the island. It has at once started to take up a question which is of preponderating interest for the future of these estates, namely, how to get a reliable labor supply. A lengthy account of the movement, from the *Preanger Bode*, appear in *De Indische Mercuur* of August 31.

DETAILS OF RUBBER COST.

THE Bukit Rajah Co., Limited, figure the cost of tapping last year, curing, packing, and freight to London, at 7d. [=14.18 cents, gold] per pound, and the proportion of cost of administration and upkeep which they have charged to production at 6d. [=12.16 cents], or a total of 1s. 1d. [=26.34] as the cost landed in London, while the average net selling price was 4s. 7½d. [=1.12½], thus showing a profit of 3s. 6½d. [=86.16 cents] per pound. The business year closed on March 31, before the beginning of the era of unprecedented high prices.

THE NEW BELGIAN RUBBER INVESTMENT COMPANY.

THE Société Financière des Caoutchoucs, formed recently at Antwerp with a capital of 3,100,000 francs [=598,300] [see THE INDIA RUBBER WORLD, September 1, 1909—page 424] by a decision of the board have increased the capital to 10,000,000 francs [=1,930,000]. As already stated in these columns, Edouard Bunge, of Bunge & Co., of Antwerp, has been elected chairman of this company. Willy Friling, of the same firm, has been elected managing director, and F. Maus manager of the company. As before stated, the object is the making of investments in rubber planting and cultivation in the Far East and elsewhere.

RUBBER PLANTING MISCELLANY.

REFERRING to the forward selling of rubber on contract, a correspondent of *The Times of Ceylon* asks what security is given for fulfillment of the contracts—say, in case the market should fall below the stipulated prices.

A specimen of plantation Ceará rubber biscuits from the government experimental garden at Kullar, South India, reported on at the Imperial Institute, London, was considered very favorably. It was valued by brokers at 5s. 6d. [=1.33½] per pound, with fine hard Pará selling at 5s. 1d. and plantation Pará biscuits at 5s. 3d. to 5s. 9d.

RUBBER SHARES ON 'CHANGE.

THE financial news cabled from Europe to America is beginning to reflect the prominence given to rubber plantation promotion in the London stock market. For example the principal transatlantic report in the *New York Journal of Commerce* of recent date starts off:

LONDON, September 23.—Except for Rubber shares our stock markets are dull. Rubber speculation is rapidly passing the bounds of prudence and caution; new flotations are of such frequent occurrence that they show how important a financial factor a popular enthusiasm can become.

"Rubber" is referred to prominently in the leading financial articles of the London papers daily, as indicated by a few recent extracts from the first page articles in *The Financial News*, in addition to the regular column of details inside the paper. For example, in three recent issues:

[September 6.]—A large volume of business was put through in British North Borneo shares, which rose at one period to 24s. 3d. and closed strong at 23s. 9d. The advance in these shares is partly attributed to the reports that a large amount of money is now coming into the country through the medium of the various subsidiary flotations, and that developments will, in consequence, be much more rapid than in past years.

[September 7.]—In other directions most sections were exceedingly quiet, owing, in a large degree, to the near approach of the settlement, but British North Borneo shares were an exception, and changed hands in large lots, while Pahangs also claimed attention, all cheap shares being readily picked up.

[September 8.]—There was increased activity in British North Borneo shares, on buying believed to be based on the details given in another column. In other directions prices were well maintained.

It must be taken into account that the North Borneo enterprises referred to are not yet producing any rubber, though their prospects appear good. The parent Borneo company has now on its premises a lot of rubber plantation companies, capitalized at more than \$5,000,000, and the activity of Borneo shares on the stock exchange is due to the paper profits made by the parent company in trading in their shares. As *The Financial News* of September 8 says, editorially:

The recent influential buying of British North Borneo shares is said to be due to a supposition that the dividend will be increased from 4 per cent. to 8 per cent., and also to the fact that the company have paid off £60,000 [=2491,990] of their debentures out of the proceeds obtained from the recent rubber flotations.

Note that the £60,000 is paid from stock trading, and not from sales of rubber. And when we come to the important plantation companies now producing on an important scale, and at a handsome profit, we do not find in the stock market record any record of "business done" in their shares, with a few exceptions.

NEW VOGUE FOR RUBBER SHARES.

It has been estimated that scarcely 1 per cent. of members of the Stock Exchange have hitherto used stronger language than the names of certain brands of cigars as a verbal vent for ruffled tempers. We understand, however, that the vogue is changing in favor of rubber shares, the names of several of which are said to give wonderful relief.—*The Financial News* (London).

VULCANIZATION OF RUBBER COATED FABRICS.

A FRENCH patent (No. 396,620—January 30, 1908) issued to M. Lamy, relates to a new vulcanizing process. Rubber-coated fabrics are wound around a drum, either separately or with metal strips inserted between the layers. The drum, fabric, and so on, are then mounted on bearings in an autoclave, into which some passive gas, such as carbonic acid or nitrogen, is fed under pressure. The autoclave is surmounted by a jacket, heated by hot air or steam, in which jacket the autoclave can revolve. This device is said to be especially well adapted for vulcanizing rubber-coated fabrics which would be injured by direct treatment with steam or chloride of sulphur, and cannot be vulcanized by a known method by means of hot air, because the rubber composition contains no substance which induces vulcanization, such as litharge.

On the Amsterdam stock exchange the shares of about a dozen rubber planting companies are now traded in.

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

UP to the first week in August the weather conditions during this summer, since the third week in May, were continuously bad, a low temperature and continuous rain being the prevailing feature. It is not surprising that under these circumstances the proofing branch of the

THE PROOFING TRADE.

rubber trade has done well. In fact this is putting it too moderately, as some, at any rate, in the trade, report business as having been excellent, and even in August the work on hand was such as to preclude further orders being taken. This applies especially to the ladies' trade, but all round I understand the year has shown a great improvement on preceding years. Things are in a different and more healthy condition than in the years immediately preceding the great decline of some years ago. The get-business-at-any-price man is now practically extinct, and with him has gone the macintosh of cheap cotton and oil substitute. The demand of today is for goods that are really waterproof and that will wear. A point that has done a good deal towards improving the trade is the formation of two associations in the Manchester district, which may be considered the headquarters of the waterproofing business. One of these associations is representative of the proofers—that is, the actual rubber manufacturers—and the other is concerned with the dealers who buy the proofed cloth and make it up into garments in their workrooms. These bodies are by no means representative of the whole trade, but those important London firms who remain outside are in entire sympathy with their aims as they have always discountenanced the price-cutting which had become so characteristic of the Manchester center. The trade is now in fewer hands than was the case twenty years ago, and it will be generally admitted that a working arrangement as to prices, without there being anything in the form of a trust, is in the interests of all concerned. Although, owing to the rise in the price of rubber, retailers' prices have been raised twice, no noticeable effect on the volume of trade has to be recorded. In this respect the proofing branch is better off than others where the amount of rubber present forms a larger percentage of the whole article.

HIGH PRICES AND SUBSTITUTES.

With the continued receipt of notices referring to increase in prices, it is not altogether surprising that buyers of rubber goods, or, at any rate, of some classes of such goods, are casting about to see if they cannot find efficient substitutes. This can hardly be to the ultimate welfare of the industry, which in previous times has received a setback in certain classes of goods by reason of reduction in quality due to competition. Present conditions certainly favor the manufacturers of non-rubber packings, and the asbestos people will not grumble. I notice that a writer in a contemporary says, that owing to the high price the use of rubber-faced card clothing is likely to die out altogether, and that a substitute has been found to take its place. With regard to this I may point out that both felt and composition cards have been on the market for years, and have had increasing sales, especially in woolen mills, where the destructive action of grease on rubber has to be contended with. Inquiries I have made in the trade indicate that there are no changed conditions which can be attributed to the rise in price of rubber, and that there are no present signs of the decrease of the rubber card-clothing. Doubtless where elastic bands have been largely used instead of string there

will be some reversion to the latter. On this point I may mention that in Germany the elastic band is largely used by shopkeepers for tying up small parcels, while in England it is rarely used for this purpose. Of course the Germans don't give too much away for nothing, and the bands are only very narrow ones, but they answer their purpose, and are appreciated by ladies. In periods of high prices of materials there is always a tendency to reduce the quality. This is apt to induce the use of other material, and if this proves satisfactory there is no return to rubber. The rubber-insulated cable has suffered in this way in the past, but at the present juncture history is unlikely to be repeated, because of the existence of the Cable Makers' Association. At the same time it is more than probable that the present situation will lead to more business going to Germany. The existence of the association, with its uniform prices for standard qualities, has led in several instances to substantial orders being given for German cables at a lower price, a fact which at Edinburgh has given rise to some acrimonious discussion in the city council.

A PATENT has recently been granted to Mr. Charles Kay Sagar, of St. Annes-on-Sea, Lancashire, for improvements in

BALATA BELTING PATENTS.

solid woven balata and gutta-percha belting. Mr. Sagar, I may say, is managing director of and has been associated many years with the well-known cotton belting firm of Messrs. George Banham & Co., Limited. This firm's work were for many years at Pendleton, Manchester, not far from those of F. Reddaway & Co. A few years ago more commodious premises were taken at Limefield Mills, Farnworth, near Bolton, and it is here that work is now carried on. Mr. George Banham, the founder of the business, died a year or two ago, as was reported at the time in these notes. A patent taken out about ten years ago by Mr. Banham was in connection with the same purpose as the recent one of Mr. Sagar, only it was sought to attain the end by employment of vacuum machinery. Although plant on a working scale was erected at the Pendleton works the patent was never actively worked. In Mr. Sagar's patent the vacuum is dispensed with, the cotton yarn being immersed in a solution of balata and after the solvent has been driven off, being woven in the ordinary way into belting. After compression at a temperature sufficient to soften the balata the result is a compact homogeneous belt which has certain definite advantages over the ordinary balata belting claimed for it.

In all the more important mining operations, and more especially in deep shaft sinking, the modern tendency is to fire the gelignite cartridges by electricity.

MINING-FUSE.

The current is obtained from a battery at the top of the shaft and is conducted to the scene of operations by a thin rubber insulated cable rolled on a drum. As many as 30 shots may be fired at once, the necessary connection between the wires and the primer cartridge containing the detonator being made by an expert. As this system allows of the men being drawn up without any rush or anxiety, it is, of course, much preferable to the use of the fuse, with its attendant dangers. Still it is more expensive, and the fuse is still largely used, especially in metal mining ventures on a small scale. Various qualities of fuse are supplied, but as water tamping is now so much in vogue, the waterproof kinds have come into increased demand. These cost more than the cotton covered, but this is always preferable to having a missfire with a greased cot-

ton-covered fuse. I am not in the secrets of manufacture, but an examination of some fuses, called by the miners gutta-percha fuse, showed that the coating consisted entirely of some resinous matter. This, however, has in my own experience always given satisfaction. Where this fuse is used to explode the detonator in the gelignite when sinking, the man who ignites it is drawn up by the windlass or engine as fast as possible to get out of harm's way. It is not often that hitches occur in the means of escape, but when they do, it is an anxious time for the miner who knows that the lighted fuse is rapidly approaching the dynamite. In the interests, therefore, of humanity, as well as of the cable trade, the extended use of electric firing in mines is desirable. In connection with this topic it is interesting to note that the government have just announced their intention to appoint a committee to consider the whole subject of the employment of electricity in mines.

In connection with this topic, it is interesting to note that the government have just announced their intention to appoint a committee to consider the whole subject of the employment of electricity in mines.

This is a new concern, located at 9 Charles street, Manchester. The main object is the exploitation of certain patents relating to football covers, these, up to now, having been invariably made of leather. The cover being put on the market by the Progressive Rubber Co. is made of rubber, or, at any rate, principally of rubber, and it is claimed for it that it is much superior to leather, especially in wet weather, when the leather-covered sphere is apt to swell and undergo changes in its symmetry. The rubber ball is said to retain its original dimensions in any sort of weather, and thus to ensure greater accuracy of play. My football days are long past and I am not prepared to enter into any discussion on the mathematics of a football's trajectory. I may say, however, that the new ball has received the approval of some of the football authorities and will be used this season in recognized competitions. The Progressive Rubber Co.'s patents relate to some other classes of goods as well and I shall refer again at a later date to the company's doings.

Mr. O. A. ELIAS, a London analyst, has discovered a specific chemical which he says will revolutionize the present methods of coagulating Pará latex, both he smoking and acetic methods. The cost is not to be increased while the product is to be much improved. A small quantity is to be added to the latex, when instantaneous coagulation will take place, with the complete elimination of the proteids and the production of a rubber which, when squeezed free from excess water can be quickly dried to good white color. He explains that the tacky conditions which rubber often gets into is due entirely to the proteids, which amount to 3 or 4 per cent. in Pará latex. This figure seems rather high, and I don't know that there are any complaints about tackiness in Brazilian fine, though with some rather serious realities of plantation fine something of the sort may be met with. So far the exact composition of the new specific does not appear to have been made public.

THE report and accounts presented at the annual meeting of this company, held on August 24, showed a very satisfactory state of affairs. In addition to the 7 per cent. dividend on the preference shares, the ordinary shares received 7½ per cent. and the sum of £1,936 was carried forward after £2,300 had been allotted to reserve, etc. In its earlier years the company had a somewhat chequered existence, paying no dividend for 20 years, but of late years, under the energetic managership of Mr. Hart, great progress has been made in the recognition of the company's manufactures by engi-

neers, whose wants are especially catered for. Considering the long sustained depression we have experienced in so many branches of engineering, and the reduced demand for mechanical rubbers, the Dermative company's balance sheet is the more noteworthy. Last year the dividend on the ordinary shares was 5 per cent. Since the death of Mr. John Cooper, in October, 1904, Mr. R. F. H. Webb has been the managing director.

ON August 26 two tanks, each containing 500 gallons of naphtha, took fire at Messrs. Frankenstein's proofing works, Newton Heath, Manchester. The efforts of the Manchester fire brigade were successful in preventing the destruction of any part of the works, and the loss was confined to the naphtha. No explanation as to the cause of the outbreak was forthcoming at the time. I have no recollection of a similar fire in this district where naphtha tanks are in common use.

NAPHTHA BLAZE.

CARD FROM THE MURAC SYNDICATE.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Referring to the article and comments on "Rubber Washing in the Trade," in your September issue (page 430), we observe that you mention our name, as being responsible for the business in question, at the same time inferring that we are engaged in a similar business to that carried on by another firm.

Our business is quite distinct, being an entirely new departure, to which the leading india-rubber brokers throughout the world are giving their hearty support. We do not *work or excessively handle the rubbers*, using no rolls, drying chambers or currents of hot air, such as your article indicates. We produce our rubbers in practically their natural state, thus preserving in every respect their good properties and behaviors.

That our efforts are appreciated by all connected with the crude rubber trade, we can only say in confirmation, that the volume of business has been so rapid, that in a number of instances we have had to decline further contracts, owing to our outputs being nearly, if not entirely, sold.

We trust you will kindly give this publicity, by the insertion of this letter in your next issue. Yours truly,

THE BRITISH MURAC SYNDICATE, LIMITED,
MORLAND M. DESSAU, Joint Manager.

Lower Edmonton, London, September 13, 1909.

MEXICAN RUBBER PLANTERS AND THE STATE.

[FROM THE MEXICAN HERALD.]

THE rubber planters of the northern part of the republic have held two meetings for the general advance of the rubber interests. In the last session a committee was named to approach the secretary of fomento and obtain government assistance.

The association, represented by the committee, made several requests of the minister. They desire that a central body be formed in Mexico City for the investigation of questions relating to the subject of rubber producing and that eleven experiment stations be established in various parts of the republic for the purpose. An appropriation of \$10,000 is asked for the maintenance of the central body and its laboratory. A further appropriation of \$35,000 is requested for the publication of works relating to the subject, giving results achieved by the experiment stations.

The secretary of fomento has not yet taken any action with regard to these requests. He may, in place of authorizing this association to pursue investigations at the expense of the government, order greater emphasis on the subject in the work of the agricultural stations already established.

A copy of the Index to "Crude Rubber and Compounding Ingredients" is sent free on request.

RUBBER COAGULATION.

THE DERMATIVE CO., LIMITED.

THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT.

THE Firestone Tire and Rubber Co. have purchased a tract of 15 acres in the extreme south end of the city, north of Cole avenue, near South Main street. The new site was made necessary by the desire for an increase of factory space. Plans are now being considered for the construction next year of a plant of large size, and of the most modern design, on the newly purchased land. A chemical laboratory with complete equipment will be included in the plan. When the new plant is occupied the old one on East Miller avenue will be vacated and disposed of. The company have an option on land adjoining the tract purchased, which they are holding until further developments. The 15-acre tract was bought from the heirs of Moses Falor for something like \$28,000. Speaking of the purchase, Mr. H. S. Firestone, president of the company, said: "This is only the first step in our plans for an expansion of our business. We have long had in mind the erection of a great modern plant, but have hitherto been handicapped by the lack of land on which to build." This step by the company is significant in view of the rapid growth since it was started in a tile building, eight years ago, by Mr. Firestone. The chief growth in the business of the company has been in pneumatic tires, which were added to the output five years ago.



HARVEY S. FIRESTONE.

[President Firestone Tire and Rubber Co.]

THE annual meeting of the Firestone Tire and Rubber Co. was held at the close of August, when the following directors were re-elected: H. S. Firestone, Will Christy, L. E. Sisler, A. C. Miller, and R. J. Firestone. These met and elected as officers the following: H. S. Firestone, president and general manager; Will Christy, vice-president; L. E. Sisler, treasurer; S. G. Carkhuff, secretary. "Our business has increased nearly 100 per cent. during the past year over the year before," was Mr. Firestone's statement after the meeting.

The annual convention of the salesmen and branch managers of the Firestone company was held during the second week of September in Akron. Seventy men were present and the convention closed September 11, with a banquet at the Portage Country Club. Among the branch managers present were: T. J. Glenn, Boston; D. C. Swander, New York; W. R. Walton, Philadelphia; C. E. Jackson, Pittsburgh; O. O. Petty, St. Louis; F. H. Martin, Chicago; W. A. Harshaw, Cleveland, and J. V. Mowe, Detroit.

SINCE the reorganization of the Swinehart Clincher Tire and Rubber Co. some radical changes have been decided upon by the directors. Two new factory buildings, one 40 x 100 feet, one story high, and the other 60 x 125 feet, and three stories high, will be added to the plant. The smaller building will contain the mill room and a part of the solid tire department, and the large building will be used to house the new branch of manufacture into which the company will launch—the making of pneumatic tires. The type of pneumatic tire to be made has not been announced. Mr. W. W. Wuchter, general manager of the plant, said, however, that the tire will have features to distinguish it from the standard types. Clinchers and quick detachable in all sizes will be made. To market the increased product of the plant, it is announced that branches will be established in Boston, Philadelphia and Buffalo, in addition to the present branches at New York and Chicago, and selling agencies will be started in all the trade centers. Mr. J. A. Swinehart, president of the company, spent September in Porto Rico on company business and at the end of the month sailed for Europe, where he will spend the next two years in looking after the foreign interests of the company.

* * *

THE Star Rubber Co. have filed a certificate of increase of capital stock from \$100,000 to \$250,000. Owing to the increased demand for their seamless rubber druggists' sundries they have found it necessary to increase their capacity. An additional building, three stories, and 50 x 100 feet, is being erected, to be devoted to making pneumatic automobile tires and inner tubes, except the third story, which will be used for the dipping department of the supplies line. They are also about to add a line of press goods, and hope to have the new factory in readiness by January 1.

* * *

FOLLOWING the fires at the plant of the Buckeye Rubber Co., a thorough investigation of city fire-fighting facilities was made by the directors of the chamber of commerce, acting as a committee of the whole. The finding of the board, after sessions lasting two weeks, was that the complaints made following the fires were not justified, that the city's fire-fighting facilities, both as to water and equipment, were adequate, and that as a matter of fact the annual fire loss is small, being only \$120,000. For the sake of providing further safeguards, the board made several recommendations for more thorough fire inspection, for the adoption of a building code modeled after that of Cincinnati, and an increase in the number of city firemen. The city council is taking steps to carry out these recommendations.

* * *

THE B. F. Goodrich Co. succeeded in acquiring, by purchase early in September, a piece of land on South Main street at the southwest corner of their plant, which now makes them owners of all the land facing on Main street for several hundred yards. The property was purchased from the heirs of Mary Abler, and the purchase price was more than \$16,000. Mr. E. C. Shaw, general manager of the Goodrich works, says that the land will be used for a new building.

* * *

MR. O. C. BARBER, a director in The Diamond Rubber Co. was banqueted on September 9 by the business men of the city of Barberton, which he founded 18 years ago. The function was given on the occasion of Mr. Barber's return from Europe. He is planning to make his home on a farm of 2,500 acres near Barberton.

* * *

THE output of high-wheeled automobiles in the plant of the International Harvester Co., in this city, is about to be increased from 10 a day to 15 a day. This type of car is being sold by the company chiefly to farmers on the western prairies. The demand for the high-wheeled auto buggy, as well as for the delivery wagon of similar construction, has increased so

rapidly that it was found necessary to increase the facilities of the local factory. The factory experimental department has perfected a new type of pneumatic tire runabout which will be manufactured here at the rate of five a day, with a prospect of a steady increase.

* * *

A SECOND uniform rise in the prices of automobile tires was made known by automobile tire manufacturers in this city on September 23. It will amount to about 15 per cent. Some manufacturers have already put the increase into effect, and others will wait until after October 1. The boost in prices is made to keep pace with the rising crude rubber market.

A general rise in prices of all kinds of footwear was announced late in September by The B. F. Goodrich Co. It amounts to about 12 per cent. The price lists being net, new lists will be issued. The change went into effect September 21. The rise is made simultaneously with that of the United States Rubber Co. The Goodrich company market the products of their rubber footwear department through the Mishawaka Woolen Manufacturing Co., of Mishawaka, Indiana.

* * *

THE annual conference of salesmen of The B. F. Goodrich Co. was held on September 23 and 24, in Akron. All branch managers and traveling salesmen were present, to the number of between 50 and 60. Mr. H. E. Raymond presided. A. E. Lumsden, manager of the London branch and the company's representative in Europe, was among those present.

* * *

ARTHUR W. WARNER, formerly chemist with the B. F. Goodrich company, and recently with the Pennsylvania Rubber Co. (Jeannette, Pa.), has taken a position as chemist for the Miller Rubber Co.

THE RUBBER TRADE IN SAN FRANCISCO.

BY A RESIDENT CORRESPONDENT.

TAKING all lines of trade into consideration, there is an apparent feeling of revived interest in San Francisco. It must be admitted that the past year has been generally quiet and that there are those who have been struggling along with little to indicate to them how they could possibly continue for a much longer time, and it is fortunate for many, that conditions have taken a broad turn for the better. But for the most part the business houses of the city have fared well enough right along, as long as the idea of getting rich is not taken into consideration. Nobody has succeeded in growing very rich as a result of their business during the past two years, but there are many who have good reason to believe that the coming fall season will bring them prosperous times and in due course, an accumulation of funds for which they have wished for a long time. San Francisco has done well enough considering the vast loss she has sustained. After the fire people here probably recovered some \$200,000,000 from the insurance companies, but even after credit is given for this, there is still a dead loss of perhaps more than \$400,000,000. Work of rebuilding the city has progressed until the city stands better now than before the fire but, to accomplish this result outside money was necessary and more of it is still necessary, so that instead of being money proud this city must for some time depend upon the money from outside sources.

In spite of the long period of money scarcity, however, commercial activity is rapidly being resumed, and a healthier tone is everywhere demonstrated, because instead of the retail merchants buying everything they can think of, as they did a little over a year ago, they are only ordering what they know they can pay for, and on this basis they are ordering quantities which are constantly increasing, so that indications point to a gradually improving business. The outlook on the coast is good and there is no complaint to be heard from any source.

ON Tuesday, September 21, the embryonic Western Mechanical Rubber Goods Association, of San Francisco and the coast, will hold its first meeting for the purpose of organizing. Mr. Runyan, of the Goodyear Rubber Co., is certain of the necessity for and success of the organization, because there are so many little features about the trade which a common understanding among the dealers will do much to improve upon. It brings the trade into closer relation, give a fitting opportunity for the development of social relations and for the correction of abuses in the business. Of two things which have given most annoyance the first is the guarantees which are now made recklessly, and which many of the customers take undue advantage of. Also, the question of dating can be discussed. As it is now, orders are so dated that they can be changed by the customer for a long time in advance. The establishments who have been invited to attend the first meeting, to be held at the Tait-Zaitland cafe are as follows: Bowers Rubber Works, Gutta Percha and Rubber Manufacturing Co., Goodyear Rubber Co., Gorham Rubber Co., Revere Rubber Co., New York Belting and Packing Co., Limited, The Pennsylvania Rubber Co., The American Rubber Manufacturing Co., The Barton Packing and Rubber Co., The Pacific Coast Rubber Co., The Phoenix Rubber Co., Plant Rubber and Supply Co., Western Belt and Hose Co., The Diamond Rubber Co., Electric Hose and Rubber Co., and Boston Woven Hose and Rubber Co.

* * *

THE Sterling Rubber Co. have been making a large exhibit at the Humboldt county fair, held in Eureka. The exhibit consists of 22 rolls of belt, and one big roll in operation, running through water, with two men in charge. This is practically the exhibit made by the firm recently in the Mechanics' fair held in San Francisco, the belt shown being the "Victor" balata belt, and the papers in Eureka have complimented the exhibit very highly. The exhibit there is being made through H. H. Buhne Co., the rubber goods house in Eureka. Mr. Perkins, manager for the Sterling Rubber Co., states that there is no more guess work about trade conditions. Business hit the bottom mark and now it is picking up. Trade is now good in the southern part of the State, and the northern valley will pick up. Oakland is not as good as it was and San Francisco is still quiet, but showing a little improvement right along.

* * *

MR. R. H. PEASE, president of the Goodyear Rubber Co., states that general business is much better than it was a year ago, and that they are looking for good business this fall, especially if there are rains in October and November. Mr. Pease believes that the coming Portola festival, which will commence on October 19, and last a week, will bring thousands of people to this city and state, many of whom, he believes, will remain, to take advantage of the excellent opportunities offered by the farming communities in the State where the lands are now being subdivided into small tracts. The festival will also show to the world that San Francisco is now in a position by virtue of its excellent and complete hotel accommodation, to entertain visitors in whatever style they desire.

* * *

JOSEPH V. SELBY, the Pacific coast agent for the Boston Woven Hose and Rubber Co., has moved from his former location, No. 507 Mission street, to new and more centrally-located offices at the corner of First and Market streets, in the Sheldon Building.

The Bowers Rubber Works report that they have received still another order from the Isthmian canal commission for dredging sleeves. They have recently installed new machinery at the plant.

The Phoenix Rubber Co. report that they are having a large run on their Staggard treed auto tires.

Inquiries from merchants are increasing in number and this seems to indicate a larger prospective consumption, is the report from the New York Belting and Packing Co., than has been noted for some time.

The Late Herr Senator Dr. Traun.

THE passing of Heinrich Traun removes from the rubber industry one of the most distinguished individuals in its annals, and one whose name was associated in many ways with the cause of progress in the land of his birth and with movements for the benefit of human kind in general. Heinrich Traun, born in Hamburg on May 8, 1838, attended the college of Dr. Wichard Lange, after which he was prepared for the university by private tutors. He studied physical sciences at Göttingen and was graduated at the age of 21 as a doctor in philosophy, choosing "Kautschuk" as the subject of his thesis. That thesis to-day stands as a good summary of what was known regarding india-rubber a half century ago; the choice of his subject was influenced, doubtless, by the fact that he had been born into the rubber industry, so to speak.

Going to London, young Traun was a chemist in the royal dockyards, where his opportunities to come in contact with laboring men at their tasks instilled in his mind ideas which later were of great advantage to him as an extensive employer of labor. He was employed later in a professional way in Paris, after which, in 1863, he became a partner in the Harburger Gummi-Kamm Compagnie (Harburg Rubber Comb Co.), already an important concern, but destined to be greatly developed under his direction. Here the story of the beginnings of this enterprise, with which Dr. Traun's family was so closely connected, may be recited briefly.

There came to America in 1842 a son of Heinr. C. Meyer, Jr., the whalebone and ivory manufacturer of Hamburg—a business dating from 1818—to establish a branch factory, which he did at Jersey City. Shortly he was joined by a clerk from the Hamburg house, Conrad Poppenhusen, and the firm of Meyer & Poppenhusen resulted, dating from August 1, 1843. Heinr. Ad. Meyer returned to Europe the next year, and in time succeeded to his father's position in the business there, but Meyer & Poppenhusen in America continued for a number of years. It was this firm that first recognized the merit of hard rubber as developed under the patent of Nelson Goodyear of 1851. Upon the licenses granted to them were founded the India Rubber Comb Co., at College Point (New York) in 1853, and the Harburger Gummi-Kamm Compagnie, organized as a branch of the Meyer interests, in 1856. Ultimately Mr. Poppenhusen returned to Hamburg, where he died; his daughter married Fritz Achelis, now president of the American Hard Rubber Co., which succeeded to the College Point enterprise.

Mention may be made here of L. Otto P. Meyer, a younger brother of the founder of the Meyer business, who came to America as technical adviser of Meyer & Poppenhusen, and by whom many important improvements in the hard rubber manufacture—the tinfoil process, for example—were patented. L. Otto P. Meyer is still living in Dresden, at the age of eighty-six.

Also it may be mentioned that the wife of the late Hon. Carl Schurz, statesman, journalist, and general, was a sister of Heinr. Ad. Meyer and of the mother of Dr. Traun. Altogether, the list includes some notable names, beginning with the founder of the

family, whose work for the development of Hamburg is attested by a monument erected by the people of that city.

The subject of this sketch was the son of Friedrich Traun, who married a daughter of the founder of the house of Meyer. As early as 1835 he was admitted to an interest in the business, from which he retired in 1870. As already stated, Heinrich Traun became a partner in 1863, at which time the hard rubber branch was operated under a separate firm style. He had two brothers, Otto Traun, who in 1870 became a partner in the rubber branch, and Max Traun, who in 1873 joined the branch then still carried on as H. C. Meyer, Jr. In 1884 the two branches became definitely separated, Heinrich Traun becoming sole proprietor of the Harburger Gummi-Kamm Co. The division gave him not only the works at Harburg a/d Elbe, but extensive premises at Hamburg, all of which have been developed constantly, in keeping with the general growth of the rubber industry. Dr.

Traun's knowledge of chemistry was of constant advantage to his firm; he was the patentee of a number of inventions of merit; and he gave liberal encouragement to develop the crude rubber resources of German Africa.

In August, 1902, Dr. Traun admitted to partnership his two sons—Heinrich Otto Traun and Dr. Friedrich Adolph Traun—the firm name becoming changed to Dr. Heinrich Traun u. Söhne, which style is still retained. At the beginning of 1908 Dr. Traun ceased to be an active partner in the firm, leaving the conduct of business to his sons. Later in that year occurred the lamented death of Dr. F. A. Traun. To-day the business is in charge of Heinrich Otto Traun, whose preparation for succeeding to such an important position has been most thorough, including a year spent in a business position in New York and travels in the Orient and the rubber country of the Amazon, with a view to giving him an insight to as many phases of the rubber business as possible.

In the early part of 1901 Dr. Heinrich Traun was elected to the position of senator of the free city of Ham-

burg, the highest and most honorable office in its government. He was the first representative in the senate of industrial interests. His election gave a great satisfaction to the people, to whose interest he afterwards devoted his time and talents almost solely, until, when nearing his seventieth birthday, he retired from office on account of advancing years.

In no part of his multifarious life work was Dr. Traun more deeply interested than in the measures for the benefit of the army of employes at his rubber works, in which respect he not only won the appreciation of those for whose welfare he planned, but set a model for other establishments which has been widely copied. In this work he was aided notably by his wife, whose death occurred in November, 1901.

For some time all reports regarding Dr. Traun's health were discouraging; his death occurred on September 10.

Dr. Traun never visited America, though in close touch with the progress made in this country, and his interests here were represented by the Traun Rubber Co. (New York), with a factory at College Point.



HEINRICH TRAUN, PH. D.

[In the robes of a senator of the free city of Hamburg.]

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED AUGUST 3, 1909.

- N**O. 929,657. Process of coating thread. E. D. C. Bayne and L. A. Subers, Cleveland, Ohio.
 929,905. Tire tool. A. C. Webber, Marrickville, Sydney, New South Wales.
 930,111. Vehicle wheel. J. C. Willmon, Los Angeles, Cal.
 930,236. Rubber elastic force cup. W. F. Schacht, Goshen, Ind.
 930,273. Tire inflation mechanism. F. A. Deunert, Kyabram, Victoria.

Trade Marks.

- 40,804. Auto Tire Security Co., Chicago. The word *Kemizite*. For composition for preventing air from leaking through tire punctures.

ISSUED AUGUST 10, 1909.

- 930,874. Cellulose substitute. O. Müller, Cologne, Germany, assignor to Rheinische Kunstseide-Fabrik, A. G., Cologne-on-the-Rhine, Germany.
 931,015. Insulating composition. [Asbestos pulp, slippery elm, a vegetable acid, glue, starch and water.] Min Delin McGerry, Kalamazoo, Mich., assignor to B. E. McDonald, Chicago.
 930,990. Boot or shoe heel. K. C. Rogers, Little Rock, Ark.

ISSUED AUGUST 17, 1909.

- 931,036. Pneumatic tire plug. J. Clanz, Hartford, Conn.
 931,173. Coupling. [For hose.] J. G. Zimmerman, Milwaukee, Wis.
 931,207. Making casings for pneumatic vehicle tires. J. O. King, assignor to King Leather Tire Co., both of Milwaukee, Wis.
 931,284. Anti-skidding device for tires. T. I. Duffy, assignor of one-half each to A. Vere Martin and G. J. Adam, all of Chicago.
 931,505. Vehicle wheel. [With cushioning means between inner and outer rims.] C. L. Shaw, Casa Grande, Ariz.
 931,553. Process for manufacturing elastic tires for wheels. T. L. Carbone, Charlottenburg, Germany.
 931,615. Vehicle wheel. [With lugs secured to the spokes, to engage with a tire carrying rim.] T. B. Jeffery, Kenosha, Wis.
 931,648. Inner tube of pneumatic tires. [With overlapping closed ends.] H. K. Raymond, Akron, Ohio, assignor to The B. F. Goodrich Co.
 931,674. Tire cover and fastening therefor. G. W. Brown, Junction City, Kan.

ISSUED AUGUST 24, 1909.

- 931,716. Tire. [Rubber tread, in channel felloe.] W. H. Bachtel, Canton, Ohio.
 931,717. Cushioned wheel. *Same*.
 931,768. Ear protector. O. C. Kirkpatrick, Dallas City, Ill.
 931,879. Automobile tire. [Casing.] C. E. La Fleur, Philadelphia.
 931,989. Tire. [Pneumatic.] J. A. Bowden, Los Angeles, Cal.
 932,316. Pneumatic wheel tire. J. Neff, Sr., West Hoboken, N. J.
 932,318. Manufacture of an elastic cellular or spongy material for use as a filter for vehicle tires, cushions, buffers, upholstery, and the like. F. Pfeumer, Dresden, Germany, assignor to Pneumatic Syndicate, Ltd., London.

ISSUED AUGUST 31, 1909.

- 932,815. Casing for pneumatic tires. J. H. Seiberling, Jonesboro, Ind.
 932,862. Vehicle wheel. [With rubber tire.] W. L. Howard, Trenton, N. J.
 932,876. Detachable rim for pneumatic or other tires. M. A. Lemercier, assignor to Société des Jantes Amovibles, all of Paris, France.
 932,976. Resilient wheel. J. Edman, assignor of two-thirds to A. M. Hovland and one-third to O. N. Nelson, all of Minneapolis, Minn.

Trade Marks.

- 28,184. New York Belting and Packing Co., Ltd., New York city. The word *Delta*, within a triangular design. For rubber hose.
 28,192. New York Belting and Packing Co., Ltd., New York city. The words *Spider Hose*, under the representation of a spider, within a triangular border. For rubber hose.
 42,734. Revere Rubber Co., Boston. The representation of a man on horseback. For mechanical rubber goods.
 42,735. Revere Rubber Co., Boston. The representation of a shield in outline. For mechanical rubber goods.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the Application, which in the case of these listed below was in 1908.

*Denotes Patents for American Inventions.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, AUGUST 5, 1909.]

- 7,332 (1908). Spring wheel with pneumatic tire. L. Hardaker, Petersham, New South Wales.
 7,830 (1908). Pneumatic tire with tread provided with studded projections of rubber. E. Kempshall, London.
 7,831 (1908). Pneumatic tire, the tread provided with transverse rims. E. Kempshall, London.

- 7,895 (1908). Spring wheel with rubber cushioned rim. B. M. de Sá, Rio de Janeiro, Brazil.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, AUGUST 11, 1909.]

- 8,151 (1908). Elastic insertion for boot heels. E. Kauert, Unna-Königsborn, Germany.
 8,157 (1908). Method of inflating bicycle tires, through the use of one of the tubes as a pump. E. Gee, Newbridge, County Kildare.
 8,185 (1908). Tire valve. J. Murray, Cowra Creek, New South Wales.
 8,320 (1908). Pneumatic tires prevented from slipping by means of ropes in longitudinal grooves in the tread. H. Siebert, Hanover, Germany.
 8,340 (1908). Covering for heads of security bolts for pneumatic tires. Self-Sealing Rubber Co. and A. Franklin, Birmingham.
 8,556 (1908). Non-skid studs for pneumatic tires. J. W. Towle, Chelsea, London.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, AUGUST 18, 1909.]

- 8,747 (1908). Non-skid rivets for tires. J. Henon, Paris, France.
 8,846 (1908). Valve fitting for hot water bags and the like. J. B. Brooks, Bromsgrove, Worcestershire.
 *8,859 (1908). Fabric for tire covers. J. F. Palmer, Chicago, Illinois.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, AUGUST 25, 1909.]

- 9,102 (1908). Non-slipping armors for pneumatic tires. American Electrical Novelty and Manufacturing Co., Berlin, Germany.
 *9,204 (1908). Solid rubber tire. H. Palmer, Akron, Ohio.
 9,238 (1908). Tire in which the tensile strength of the material is used to support the tread. J. F. Spong, London.
 9,330 (1908). Elastic tire. C. A. Hutchison, Prestwick, Ayrshire, and two others.
 9,469 (1908). Golf ball. E. Kempshall, London.
 9,470 (1908). Pneumatic tire with recessed tread. E. Kempshall, London.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application)

- 399,896 (May 7, 1908). Société pour l'Exploitation des Caoutchouc au Congo. Apparatus for the extraction of caoutchouc and other gums from *Hunes*, barks, and the like.
 399,934 (Jan. 28, 1909). F. Bodet. Machine for fastening revolving heels to shoes.
 400,085 (March 2). G. Pouzet and J. Bardin. Elastic tire.
 400,125 (March 3). M. Ritter. Pneumatic tire.
 400,190 (Feb. 13). J. D. Prince. Improvements in tires.
 400,230 (Feb. 20). C. Jenatzy. Pneumatic tire with multiple tubes.
 400,323 (Feb. 13). A. E. Reullier. Pneumatic tire.
 400,394 (March 5). H. Rougier. Removable rim for tires.
 400,453 (March 8). B. Paschka. Protective tread for tires.
 400,457 (March 8). C. Zimmermann. Protecting plates for pneumatic tires.
 400,466 (Jan. 9). Mme. C. Prince. Improvement in inner tubes for tires.
 400,564 (March 9). J.-H. Messingy. Pneumatic tire.
 400,574 (June 11, 1908). C. de Rosetti. Pneumatic tire.
 400,585 (Feb. 6, 1909). J. C. Barker. Improvements in tires for vehicles.
 400,635 (March 10). G. Ehuillier. Protective tread for tires.
 400,644 (March 10). C. Beau. Protector for tire tubes.
 400,712 (March 12). H. W. Pickermey. Pneumatic tire.
 400,744 (June 20, 1908). L. Deroche. Pneumatic tire tread.
 400,761 (March 13, 1909). A. Oesterreicher. Process and apparatus for the manufacture of rubber stamps.

[NOTE.—Printed copies of specifications of French patents may be obtained from R. Bobet, Ingenieur-Conseil, 16 avenue de Villier, Paris, at 50 cents each, postpaid.]

A RUBBER SHRUB IN CHILE.

THE United States consul at Valparaiso reports concerning the *Euphorbia lactiflua*, a rubber shrub discovered by the botanical section of the national museum of Chile:

"A very good quality of rubber can, it is claimed, be easily made from this shrub, which is found on the mountains and table lands of that portion of the interior of Chile extending from Taltal south to Caldera, a distance of about 75 miles. It is said to be of no other use than for rubber and wood pulp. It is claimed that extracting the sap does not injure the plant, and that there seems to be a future for the industry if attention be given to its cultivation. It is badly scattered and in many cases difficult of access, but it is claimed that it could easily be cultivated. A company has been organized to develop the industry, and is seeking a concession."

GOODRICH RUBBER BELTING



Largest Factory and Most Complete Equipment in the World
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- "Pilgrim," for all general requirements.
- "Rob Roy," our commercial grade for ordinary work.

SPECIAL BRANDS

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- "Sterling," what its name implies.
- "Pinnacle," the strongest and highest quality *coverless belt* produced.
- "Marathon," a coverless belt for high speed wood working machines.

Elevator Belts for all kinds of mine and grain elevating.

Conveyor Belts for all conveying uses.

Polishing Belts for emery, and polishing wheels.

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Points On the Cotton Situation.

THE superintendent of the New York Cotton Exchange, Colonel William V. King, in his annual report covering the crop season ended August 31, shows a total yield for 1908 of 13,817,516 bales, against 11,441,269 bales for 1907, and 13,539,948 bales the preceding year (also Colonel King's figures). Mr. William Hester, secretary of the New Orleans Cotton Exchange, another recognized authority, collecting his statistics independently, places the total of the last crop at 13,825,457 bales. It is admittedly the largest crop on record.

The following table, supplied by Superintendent King, indicates the disposition of the latest crop, as compared with that of the preceding year:

	This year.	Last year.
Southern mill takings.....bales	2,554,746	2,079,434
Northern mills and Canada.....	2,815,861	1,989,014
	5,370,607	4,069,048
Exports to—		
Great Britain.....	3,539,124	2,944,168
France.....	1,064,747	890,203
Germany and Continent.....	3,590,690	3,430,038
Mexico.....	48,769	5,041
Japan, etc.....	201,593	191,386
	8,444,923	7,460,836
Total.....	13,815,530	11,629,884

The same authority refers to the uniformly good quality of the latest crop both as to grade and staple, making it for the spinner one of the most excellent crops produced in point of working quality. This has promoted the rapid absorption of the crop by spinners. The absorption has been further promoted by the fact that the spindles of the world are each year steadily increasing in number, requiring under normal conditions large crops of cotton to supply the demand for cotton goods.

Government reports and private statistics agree that the growing crop is below the average in point of acreage, while throughout the summer the condition was reported poor. This condition, combined with the increasing consumption of cotton, and the further fact that no other country is showing a larger production, points to the conclusion reached by the *New York Journal of Commerce*: "The price will no doubt be high relatively, and legitimately so, and the effect will be felt in the manufacturing industry here as well as abroad."

A LARGER "SEA ISLAND" CROP.

WHILE the crop of Sea Island cotton for the season ended August 31 was very much larger than for the preceding year, exports (which term embraces deliveries to domestic mills) were larger than the production, so that the current season began with somewhat smaller stocks than were reported one year previously. John Malloch & Co., of Savannah, report that the past year was one of fairly wide fluctuations in price. During the early fall of 1908 the demand was light, and the market sagged until "Fancy Georgias" sold at 17½ cents first cost. About the middle of October a larger demand sprang up, caused by the placing of yarn orders for automobile tires. The market was pretty well swept of cotton within two weeks and prices advanced until Fancy sold at 20½ cents first cost. Late in November the demand was again slack, and prices declined to 18½ cents. December saw large orders again, and there has been a good business most of the time since, with advancing prices. Messrs. Malloch & Co. reported September 3: "The market opened here at 22 cents first cost for Fancy

and there seems to be a sufficient demand to keep prices on the present level for some time to come." The same firm report the following statistics of the Sea Island crop for the last two seasons, from September 1 to August 31:

	1907-08.	1908-09.
Stock beginning of season.....bales	709	3,223
Receipts.....	85,024	101,420
Aggregating.....	85,733	104,643
Exports.....	82,510	102,303
Stocks end of season.....	3,223	2,340

Comparative Statement of Crop for Eight Years.

1901-02.....bales	78,621	1905-06.....bales	123,364
1902-03.....	102,634	1906-07.....	58,932
1903-04.....	76,704	1907-08.....	85,024
1904-05.....	102,668	1908-09.....	101,420

This year's crop is stated to have been in perfect condition up to the middle of July, after which heavy rains and hot weather affected it injuriously. While it is early yet to make an estimate, it is not regarded probable that the production will be as large as last season.

BRAZIL EXPORTS LESS COTTON.

THE British legation in Brazil reports: "Cotton exports, which average £1,500,000 sterling, and realized £1,750,000 in 1907, reached a value of only £200,000 in 1908. This decrease is put down to the fact that home manufactures are growing. Brazilian manufactured goods may be expected gradually to take the place of British, though the process may be a slow one. The native mills are perfecting their product, and goods formerly imported are now made in the country."

APPAREL FOR THE MOTORIST.

A WRITER on the subject of apparel for automobile use, in *The Motor News* (London), says that it is no longer necessary for a motorist to advertise himself by adopting a form of covering which is peculiar to the pastime, but it is essential that he should deviate sufficiently from ordinary practice as to render himself impervious to the coldest winds that blow and the heaviest rain that falls.

The reign of leather, this writer says, is over. It was never a satisfactory material. The saying, "there's nothing like leather," may apply to footwear, but its unsuitability as an outside body-covering has been proved, for it wears rapidly, or, rather, becomes shabby quickly, and, even in its very finest form, it is ugly and unhygienic.

Reference is made in the article to a number of styles of motoring clothes and accessories, more or less waterproof, made by high-class firms. The writer concludes: "One really good motoring coat, obtained from a firm that knows its business, is sufficient, with a well-designed mackintosh for heavy rains to complete the equipment."

RUBBER AS A SUBSTITUTE FOR ALCOHOL—Dr. Charles Alexander T. MacNicoll, in an address before the American Medical Society for the Study of Alcohol and Other Narcotics, at Atlantic City, said: "The mistaken idea that alcohol is a stimulant dates from medieval times. It has been used as a stimulant for almost every disease known to man. Alcohol is not a stimulant but a narcotic and a nerve-deadener. Chewing a piece of india-rubber will produce better digestive juices in the stomach than any amount of alcohol."

THE RUBBER TRADE IN CANADA.

CANADIAN imports of manufactures of india-rubber and gutta-percha for the fiscal year ended March 31, 1909, by countries, are officially stated to have been in value as follows:

	United States.	Great Britain.	Other Countries.	Total Value.	Duties Collected.
Boots and shoes..	\$73,349	\$561	\$84	\$73,994	\$18,442
Belting	30,675	1,825	.....	32,500	8,801
Clothing and water-proof cloth	30,497	86,380	297	117,183	30,363
Hose	55,220	907	145	56,272	19,598
Packing and mats.	63,821	2,507	25	66,353	23,028
Vehicle tires.....	96,795	10,732	2,048	109,575	37,432
All other	332,562	80,098	33,038	445,698	115,615
Total	\$682,919	\$183,019	\$35,637	\$901,575	\$253,279
Total, 1907-08...	666,307	182,360	49,457	898,124	247,898
a Total, 1906-07...	476,444	68,957	30,490	575,891	158,244
b Total, 1905-06...	680,014	99,695	32,034	811,743	100,879
b Total, 1904-05...	634,422	164,996	26,071	825,399	213,607

a. For nine months ended March 31, 1907.
b. For fiscal years ended June 30.

Imports from Germany amounted to \$22,646 for the nine months ended March 31, 1907; to \$27,815 in the next twelve months, and \$22,209 in the fiscal year ended March 31 last.

There may also be noted the following imports, not classified by the customs as "rubber goods," but having a relation to the industry:

	United States.	Great Britain.	Other Countries.	Total Value.	Duties Collected.
Webbing, elastic and non-elastic..	\$160,792	\$33,709	\$7,941	\$202,442	\$38,241
Stockinettes for rubber footwear.	67,852	8,296	.....	76,148	11,006
Duck for rubber belting and hose	66,873	6,730	.....	73,603	free
Rubber thread	1,480	23	.....	1,503	free

EXPORTS OF CANADIAN RUBBER GOODS.

Belting	\$4,302	Clothing	\$250
Hose	5,419	All other	84,200
Footwear	141,374		
Mats and Matting...	538	Total	\$236,083

Distribution of Rubber Goods Exports.

To—	Value.	To—	Value.
Great Britain.....	\$21,273	British Guiana.....	\$238
Australia	43,129	Argentina	51
Newfoundland	44,344	Belgium	497
France	2,218	Denmark	1,347
United States	73,085	Italy	1,455
New Zealand	47,974	British West Indies...	147
Mexico	8	British East Indies...	31
St. Pierre	94		
British Africa	192	Total	\$236,083

Comparison with Former Exports.

Year ended March 31, 1908.....	\$239,983
Nine months ended March 31, 1907.....	169,294
Year ended June 30, 1906.....	266,504
Year ended June 30, 1905.....	170,359

IMPORTS OF RAW MATERIALS.

	Pounds.	Value.
India-rubber and gutta-percha.....	2,039,108	\$1,681,269
Rubber recovered; rubber substitute; hard rubber in sheets.....	2,652,704	634,940
Rubber, powdered, and rubber waste.....	1,433,070	167,361
Total, 1908-09	6,124,882	\$2,483,570

RUBBER GOODS IN MANITOBA.

AN indication of the growth of the rubber goods trade in the western part of the Dominion is the announcement that The Winnipeg Rubber Co., Limited, western selling agents for the Gutta Percha and Rubber Manufacturing Co. of Toronto, Limited, have made arrangements for largely increasing their facilities. Their plans involve the erection of a seven-story building on a lot 50 x 100 feet which they have

purchased for the purpose in Winnipeg, the building to cost \$75,000. Mr. Trumbull Warren is president of the company and Mr. A. A. Andrews vice-president and general manager. The company have a branch house at Calgary, Alberta.

CANADIAN IMPORTS OF RUBBER TIRES.

IMPORTS of the rubber tires (for vehicles of all kinds) are reported by the customs service in Canada in more detail than in other countries. The following official statements of value are for fiscal years ended March 31:

	1907-08.	1908-09.
Great Britain.....	\$10,326	\$10,732
France	931	1,484
Germany	1,287	564
United States.....	81,555	96,795
Total	\$94,099	\$109,575

Imports of automobiles and other motor vehicles during the past fiscal year amounted to 533, valued at \$585,097, of which the United States contributed 469, worth \$474,757.

CANADIAN CONSOLIDATED DIVIDENDS.

THE directors of Canadian Consolidated Rubber Co., Limited, declared regularly quarterly dividends of 1¼ per cent. on their preferred stock and 1 per cent. on the common, payable on October 1. A feature of the Montreal stock market of late has been the marked advance in Consolidated Rubber common shares, which have been quoted as high as 99½.

RUBBER REDEEMERS MADE HER RICH.

[FROM THE NEW YORK SUN, SEPTEMBER 19.]

THERE may be a thousand and one ways of going into business for one's self, but Mrs. Augusta Matzner, of New York City, seems to have found the one thousand and second. It was while she was on a trip to Europe a number of years ago that a merchant with whom she was talking at a reception remarked casually that he wondered whether there was any market in America for old rubbers and overshoes. Mrs. Matzner thought this request strange, and on inquiring found that many tons of worn rubber footwear was being thrown away or used for small profit in Europe.

When she returned to America Mrs. Matzner had something more valuable than Parisian frocks. It was something on which the custom inspectors could not assess duty, for it was an idea. She made a round of the New York rubber redeemers and manufacturers and learned that old rubber was in demand all the time. She cabled the European merchant with whom she had first talked to send her all the old rubbers he could get. She sold the shipment at a good profit. For two years she did business in this way, depositing her profits always in the same bank.

Finally she found she could get the trade of a number of the largest European firms, and for this she needed much more capital than she possessed. She went to the president of the bank with which she had done business and asked for a large loan. If the president had been at all sceptical as to her ability the explanation she gave him of the future of the old rubber trade convinced him and she got the loan. To-day she receives old rubber from Europe in thousand-ton lots and is one of the largest individual factors in the rubber redeeming trade.

THE Monte Cristo Rubber Plantation Co. (Greeley, Colorado) state that on their estate in Mexico they have 900 acres under rubber (*Castilloa*), all in good condition. They have planted rubber in each year (in June) as follows: Forty acres in 1906, 360 in 1907, 100 in 1908, and 400 in 1909. The first 40 acres, three years old in June last, was reported at the end of August to average 25 feet in height and 5 inches in diameter.

Some Rubber Interests in Europe.

THE INDUSTRY IN DENMARK.

A NATIONAL exposition for Denmark, on rather a large scale, was held recently at Aarhus, the second largest city in the Kingdom, closing about the middle of September. The beautiful location and the splendid buildings alone made the exposition worth visiting, besides which the exhibits were of real interest, both to the people of the country and to foreigners.

The two Danish rubber manufacturing companies, exhibiting in the Arts and Manufactures building, both received first-class diplomas (silver medals), the highest awards made.

Aktieselskabet de Forende Gummi- og Lufttringefabriker Schjønning & Arvé, at Copenhagen, exhibited under a giant diving bell bearing the company's trade mark (elephant's head and the word "Force"), a diver in complete diving outfit, standing on a pedestal of hose and surrounded by four columns of alternating white and red pneumatic tires ("Aequator" brand), surmounted by rubber balls illustrating the national colors. The company, formed in 1896, employ about 100 men, and are credited with an annual production of 1,000,000 kroner [= \$268,000]. Exports are made to Sweden and Norway.

At the exhibit of Aktieselskabet Skandinavisk Gummi-Compagni, of Odeuse, the attention of the crown prince and crown princess was attracted on the opening day by the figure of a footman placed on a high pedestal and wearing a red rubber cap (in Denmark all the royal servants, as well as the letter carriers, are dressed in red uniforms). The company exhibited waterproof raincoats for men and women, as well as Danish army uniforms, wheel tires, and so on, all bearing their trade mark—the words "Isonandra Gutta," with pictures of rubber plantations. Posters announced that the company sell exclusively to dealers. Seventy-five to 100 workmen are employed, and the production amounts to 350,000 kroner.

Gutta-percha and india-rubber cable insulations, and plates illustrating the same, were shown by Det Store Nordiske Telegraf-Selskab A.-S. (Great Northern Telegraph Co.), of Copenhagen. The structure in which this company had its exhibit housed made an imposing effect on account of its size and practical arrangement for demonstrating purposes. The rotunda could be reached by a stairway and was topped by a cable buoy. A survey of their cable line could be obtained by means of maps, photographs, specimens, and sample collections, showing also instruments and various cable types. The display contained illustrations of the damage done to sea cables by the propeller screws of steamers and fishing gear. (First-class diploma.)

Aktieselskabet Nordiske Kabel- og Traadfabriker (Northern Cable and Wire Works Co.), of Copenhagen and Middelfart, showed cables, wire and other products of their rolling mill.

The firm of Simonsen & Weels Efterfølger exhibited surgical dressing fabrics of their manufacture. Camillus Nyrops Etablissement, of Copenhagen, purveyors of instruments to the University, showed a similar line of goods of their own manufacture, as well as surgical, hospital and sick-room supplies, bandages, and the like.

Aktieselskabet Drivremme-fabriken "Dana" of Lyngby, showed patented cotton canvas belting. Among the testimonials shown was one from the before-mentioned manufacturing concern of Schjønning & Arvé. (Second-class diploma.)

Madsen & Giersing, Fabriken Ondulium, of Copenhagen, manufacturers of paper board and corrugated board, exhibited a novel air cell insulation or covering for superheated steam,

made of a compound of asbestos and prepared paper—recommended as cheap, cleanly, and durable.

C. Ramm, of Copenhagen, exhibited rubber horseshoe pads made in imitation of American patterns. [The preceding details are derived from the *Gummi-Zeitung*.]

IMPROVED CONDITIONS IN GERMANY.

[FROM THE "GUMMI-ZEITUNG," BERLIN, SEPTEMBER 10.]

THE publication of the first balance sheet issued during the current year by a German rubber works was an event of unusual interest. It is well known that times have by no means been favorable to the rubber trade since January 1, 1909. Unfavorable fluctuations in the market, general business depression, unwillingness to buy goods, increased taxes, and advances in prices were prominent features of the first six months of the current year, in addition to the enormous advance in the price of crude rubber. In view of these conditions it was assumed that the balance sheets of the German rubber manufacturing concerns would show figures exactly of a nature to give cause for rejoicing.

It is consequently and all the more pleasant surprise to learn that the Vereinigte Gummiwaren-Fabriken Harburg-Wien, vormals Menier-J. N. Reithoffer intend to move in the general meeting to be held on October 30, that a dividend of 6 per cent. be declared. This showing, which may be considered very satisfactory for the rubber trade at large and for the aforesaid company in particular, furnish grounds for the expectation that the balance sheets of other rubber works will not fall far behind those of previous years.

The fact that the Harburg-Wien Company will declare a dividend of 6 per cent. proves that conditions have greatly improved and that we may now expect a continued general improvement and the dawning of better days for the shareholders. The amounts deducted for depreciation from the book value of the plant have this year been unusually large, and there is consequently reasons to assume that the company is once more enjoying the good old times. In this connection it deserves attention that higher prices have been obtained for the output of rubber shoes, a line which the Harburg works are pushing energetically. According to a recent report, such buyers of rubber shoes as have not as yet covered their requirements by making contracts at low prices, will henceforth have to pay higher rates both for prompt and future delivery. The advance in the prices of crude rubber is a sufficient justification of such a policy, the more so because American and Russian rubber good manufacturers have already advanced their quotations on rubber shoes.

GERMAN IMPORTS OF SWEDISH RUBBER FOOTWEAR.

[FROM THE "GUMMI-ZEITUNG," BERLIN.]

THE fact that Sweden is interested, to a by no means inconsiderable extent, in the exportation of rubber shoes to Germany, is proved by the following figures, compiled on the basis of the German trade statistics:

RUBBER SHOES IMPORTED INTO GERMANY FROM SWEDEN.

	Kilos.	Marks.		Kilos.	Marks.
1900	12,900	74,000	1905	142,800	785,000
1901	51,000	306,000	1906	264,300	1,454,000
1902	44,700	286,000	1907	5,000	20,000
1903	28,400	142,000	1908	77,300	309,000
1904	15,300	84,000			

The large imports during 1905 and 1906 must be attributed to the planned increase in the German import duty on rubber shoes, which was expected at that time. During January and February,

1906, alone, the imports of rubber shoes from Sweden amounted to 258,500 kilograms, representing a value of 1,422,000 marks. The imports during the period March-December, 1906, were, however, very insignificant.

By the large imports from Sweden in 1905, that country became second in importance as a source of supply for Germany, a place which had up to that time been occupied by the United States, the largest source of supply being Russia. On the other hand, imports from Austria-Hungary decreased very considerably. At the time of the negotiations for the commercial treaty between Germany and Sweden, the latter country showed a very active interest in permanently securing the German outlet for its rapidly developing new industry, in which five manufacturing concerns were engaged at that time.

In this connection we would state that the United States is not entitled to claim that rubber shoes of American manufacture should be allowed to enter Germany on the payment of a duty of 80 marks per 100 kilograms. Glazed rubber shoes imported from the United States must, in fact, pay duty at the general tariff rates of 100 marks per 100 kilograms. Imports from the other countries of supply are, however, entitled to enter Germany on payment of the reduced treaty rate of 80 marks, in consequence of their just claim to be allowed the benefit of the "most favored nation" clause.

LEYLAND AND BIRMINGHAM RUBBER CO., LIMITED.

For the year ended June 30, 1909, the trading profit was £35,353 [= \$172,045.37], to which has to be added the balance brought forward from last year of £6,337, making a total of £41,690. Depreciation, reserve for discounts, bad and doubtful debts, and directors' remuneration amount to £7,374, and an interim dividend at the rate of 5 per cent. per annum paid December last absorbed £6,706, leaving a disposable balance of £27,609. The directors recommend a final dividend at the rate of 10 per cent. per annum free of income-tax, payable on and after August 18, making, with the interim dividend as shown above, 7½ per cent. for the year and to carry forward to next year's accounts £14,196.

TAXICABS IN LONDON.

THE General Motor Cab Co., Limited, the pioneer company in its field in London, having introduced the taxicab there from Paris, with the aid of French capital, have issued a loan of £400,000 [= \$1,946,600] in 5 per cent. first mortgage debentures, with a view chiefly to completing the purchase of rolling stock already ordered. A circular issued to the shareholders contains these details, dating back to August, 1908, the first month of the present fiscal year:

	Aug., 1908.	Jan., 1909.	June, 1909.
Average number of cabs operated...	986	1,225	1,501
Average daily receipts per cab... £1 12s. 11d.		121 9s. 3d.	£1 17s. 6d.
Total receipts during month.....	£50,265	£54,663	£84,560

The net profits for the six months ended January 31, 1909, were £101,952 18s. 6d. [= \$496,154.27]. The company will own 3,476 motor cabs when the present purchases are completed, at a cost of £1,043,713 [= \$5,079,220.31], besides "cars de luxe" and other items of rolling stock costing £59,017. The earnings of the latter cars are not listed in the preceding table. The capital of the company, organized in May, 1906, after which it absorbed the Union Motor Cab Co. [see THE INDIA RUBBER WORLD, December 1, 1908, page 88], is £1,006,000 [= \$4,895,699].

In reply to an inquiry the British Home Office recently gave the numbers of taxicabs and of hansoms and four-wheeled cabs licensed in the Metropolitan area on July 1, 1908, and July 1, 1909. The numbers are as follows:

	1908.	1909.
Hansom cabs	5,329	4,639
Four-wheeled cabs	3,768	3,379
Motor cabs (taxicabs).....	1,508	3,394

The number of motor cabs licensed at the beginning of this year was 2,805.

All the taxicabs in London are not operated by the General Motor Cab Co., by a good deal. *Motor Traction* says The Coupé Co. have close on 1,500 cabs in service and will increase the number to 2,000 within a few months.

Everywhere in Great Britain interest in the taxicab is on the increase, and their use is being introduced. The number of taxicabs in Manchester has increased within a year from 53 to 67. The number in Edinburgh has increased from 50 to 106. The Bedford town council has granted licenses for 12.

GREAT BRITAIN.

ELECTRA Rubber and Vulcanite Syndicate, Limited, registered August 7, with £5,000 [= \$24,332.50] capital, to acquire a sole license to reclaim rubber under the invention of W. H. Hyatt. Registered office: 38 Wilson street, E. C., London.

St. Helens Cable and Rubber Co., Limited (Warrington), have appointed Davidson & Blackadder, of Glasgow, agents for the sale of their goods for the whole of Scotland.

I. Frankenberg & Sons, Limited, of Salford, Manchester, have appointed Watson & Whyte, of Glasgow, their agents for the sale in Scotland of rubber-insulated and bitumen cables.

RUSSIA.

THE Russian-French India-Rubber Co., "Prowodnik," at Riga, are understood to be producing 50 tons of reclaimed rubber per day in three qualities: (1) from the uppers of Russian galoshes; (2) from uppers and soles, and (3) from all parts of rubber boots and shoes. Their reclaiming plant is claimed to be large enough to deal with the whole Russian supply of old galoshes.

NORWAY.

AKTIESELSKABET den Norske Remfabrik, established in 1891 as manufacturers of balata belting and leather goods at Christiania, are extending their plant for the purpose of taking on the manufacture of mechanical rubber goods.

RUBBER IN AEROPLANE FABRICS.

THE manufacture of india-rubber proofed aeroplane and balloon fabrics has been taken on extensively by The North British Rubber Co., Limited (Edinburgh), who appear to be the pioneers in this field in Great Britain. They issue a list of different grades of aeroplane fabrics, 36 inches wide, varying in price from 2s. 10d. [= 69 cents] to 8s. 9d. [= \$2.13] per yard. A description of the highest-priced grade refers to its being formed of three plies of cotton, with rubber coatings, and yet this material weighs only 4½ ounces per square yard. The fabric is of the best quality that can be produced, and is mentioned as standing a strain per square yard of 3,000 pounds warp and 2,400 pounds weft. On its exposure to a supersaturated atmosphere for a moderate length of time, the increase in weight equals 71½ per cent. There are grades containing a single ply of cotton, proofed either on one or both sides with rubber, but the coating is referred to as being air proof, and the fabric capable of standing a very heavy strain. These fabrics are attached to the machines by means of grommets taped on.

The balloon fabrics offered by the same firm are composed of two plies, with three coatings of rubber, one coating between the plies and one each outer side. The outer coating is of red rubber, prepared specially to prevent decomposition from moisture and heat, and to withstand the actinic action of light. The grey coating employed for the inside is calculated more especially to withstand the deteriorating action of gases. The internal coating of rubber renders the whole practically one fabric. The threads of the two plies are placed at different angles and, when the whole is vulcanized together, it is practically impossible to tear it, and in the event of a rent, this will not continue along the fabric. The weight of this material is 9½ ounces per square yard, and the price 9s. [= \$2.19] per lineal yard 36 inches wide.

The Editor's Book Table.

ANALYSE DU CAOUTCHOUC ET DE LA GUTTA PERCHA. PAR Maurice Pontio. . . . [In the Encyclopédie Scientifique des Aide-Mémoire—Léauté.] Paris: Gauthier-Villars. 1909. [Paper. 16mo. Pp. 170. Price, 2.50 francs.]

THE author of this work is an expert chemist in the service of the French office having charge of posts and telegraphs, and the fact of his having been selected to prepare a volume on the chemistry of india-rubber and gutta-percha, in the important series to which this work belongs, is in itself a high testimonial to his professional standing. Beginning with a general account of the sources of rubber, of the nature of latex, and the different methods of coagulation, the author proceeds to the discussion of physical characteristics of the leading grades of rubber, after which he takes up the methods of analysis by the leading authorities, to which he adds some of his own. The book deals with physical tests as well as chemical analyses, and one-fourth of its space is devoted to gutta-percha, which is natural in a work from this source, on account of the importance of this material in electrical insulation.

LECTURES ON INDIA-RUBBER. BEING THE OFFICIAL ACCOUNT of the Proceedings of the Conference Held in Connection with the International Rubber and Allied Trades Exhibition, London, September, 1908. Edited by D. Spence, PH.D., F.R.C. . . . London: International Rubber and Allied Trades Exhibition, Limited. [1909.] [Cloth. 8vo Pp. 334. Price, 10/6, net.]

THE notice of this book in the last INDIA RUBBER WORLD was based upon advance sheets, without having before us the title of the book, which is here reproduced for the sake of having it in the record, so to speak. In addition to the features of the work mentioned already in these columns, Dr. Spence's compilation embraces reports on the social functions in connection with the International Rubber Exhibition, most of which were mentioned currently in THE INDIA RUBBER WORLD. These affairs particularly merit a record in this stately volume, since they contributed so conspicuously in aiding the representatives of so many rubber planting countries to become personally acquainted—by no means the least valuable result of the Rubber Exhibition.

RUBBER SHARE HANDBOOK. DETAILS OF COMPANIES OWNING Rubber and Other Produce Properties in Ceylon, the Malay Peninsula, British North Borneo, Sumatra, Java, Africa and South America. . . . London: Financier and Bullionist. 1909. [Boards. 12mo. Pp. 317. Price, 2 shillings.]

THIS, the third edition of a work already favorably commented upon in these pages, is the best book of its class which has yet appeared, both because it is the latest in the field and because it contains details in respect of more companies than any preceding compilation. Statistics are given of 290 companies devoted wholly or in part to rubber planting, the same being located in a score of colonies and countries. The work appears to leave nothing to be desired in respect of accuracy. The directors of each company are named on the page devoted to the company, and at the end appears a directory of directors—483 names in all—with the companies with which each is connected. We notice that there are individuals connected with the boards of nearly a score of companies each.

MANUEL PRATIQUE DE LA CULTURE ET DE L'EXPLOITATION des Essences Caoutchoutifères Indigènes et Introduites au Congo Belge. Brussels: A. Lesigne. 1909. [Cloth. 8vo. Pp. 126.]

THIS work, issued under the auspices of the Belgian minister of colonies, is an elaboration of a manual issued under a similar title several years ago. It relates in detail to (1) rubber trees, (2) lianes, or vines, and (3) *caoutchoucs des herbes*, or "root rubber." Following a brief description in plain language of each species is an account of the habitat, including conditions of soil and the like, with suggestions for propagating the species, and for its cultivation. Finally

are suggestions based upon practice for collecting latex, whether from trees, vines, or roots; the coagulation of the same, preparation for market, and transportation. Experiments in rubber cultivation in the Congo country, particularly at Coquilhatville and Eala, not to mention work done on rubber concessions, have been carried on to an extent which provides not a little material for a practical manual such as this is designed to be. Prominence is given in this book to the native *Funtumia* and *Hevea* among trees, *Landolphia Klainei* among vines, and *Landolphia Thollonii* of the "root rubber" species, though the cultivation of several other species is regarded with favor. The interest and value of the book are enhanced by the introduction of 29 plates, illustrating botanical specimens and methods of tapping and the like.

ANNUAIRE UNIVERSEL DU CAOUTCHOUC. DE LA GUTTA-Percha, et des Industries qui s'y Rattachent. Paris: La Caoutchouc et la Gutta-percha. 1909. [Paper. 8vo. Pp. 167. Price, 6.50 francs.]

OUR excellent contemporary, the organ of the rubber trade in France, has brought out the second annual edition of its Universal Dictionary of the rubber and allied industries. The general character of the work is the same as last year, but it appears in a more convenient form. By increasing the number of entries on each page the work has been brought into smaller bulk, which is an advantage. Naturally the lists are fullest for France, but manufacturers and dealers are included for the other leading countries of Europe and the United States of America. The editor has not always distinguished properly between makers of goods and dealers, and the book bears evidences of having been set up by printers unfamiliar with the languages in which some of the firm names are expressed. We do not doubt, however, that the trade will accept the invitation to suggest corrections where any may be needed, and that the work will become increasingly valuable with each new edition. Strangely enough, no American manufacturers are mentioned under the heading of Tires. The fullest department, perhaps, is that of firms in the crude rubber trade, the list of which, filling 16 pages, relates to every country or colony now producing rubber commercially.

DE BALTA-INDUSTRIE IN SURINAME [SURINAM: 1909.] [PAPER. 8vo. Pp. x + 98 + cix.]

THIS is a government publication, which has grown out of the interest in the products of Dutch Guiana, stimulated by the exhibit made at the International Rubber Exhibition of 1908, where the colony was represented by a subcommittee of the Netherlands committee already mentioned at length in THE INDIA RUBBER WORLD. The secretary of that subcommittee was Dr. J. Sack, who is chemist at the Surinam experiment station of the colonial department of agriculture. Dr. Sack is the editor of this brochure on balata, which is devoted to the history of the development of this product in general and in Surinam in particular. The existence of *Mimuseps balata* was recognized in the colony practically as soon as in any other region, but the exportation of its product was not developed without considerable delay. The exports have grown from 166 kilograms in 1881 to 454.194 in 1908. The history of the concessions system is given, and the regulations adopted at various times for encouraging the industry while conserving the supply. Chapters are devoted to the botany and chemistry of balata.

THE VISCOSITY OF INDIA-RUBBER AND INDIA-RUBBER SOLUTIONS: With Special references to its Bearing on the Strength or "Nerve" of Crude Rubber. By Dr. P. Schidrowitz and H. A. Goldsbrough. [Reprinted from the Journal of the Society of Chemical Industry, London Section, January 15, 1909.] [Paper. 12mo. Pp. 14.]

"7-LEAGUE" RUBBER BOOTS.

IN the construction of this novelty in rubber footwear, with sewed leather soles, the vamp lining of the boot, as well as the counter lining, instead of being turned in under the foot, as is done ordinarily in making rubber boots, is turned out over the welt. A welt composed of two layers of canvas with rubber between them is then placed on the sole of the boot, and on the outside of the boot a strip of canvas extending about an inch above the sole is placed all the way around the foot. This also extends out over the out turned upper, and is forced into position by a blind stitcher. The shell is thus vulcanized, after which it is stitched with a stitching machine, the stitches passing down through the put turned canvas strip and out turned



"7-LEAGUE" RUBBER BOOT.

vamp and counter lining the welp sole and the wearing sole. In this manner the threads pass through four thicknesses of canvas, making a juncture so strong that no nails are necessary in the sole of the boot to hold it fast to the upper. Of course, nails are placed in the heels to hold fast the lifts and top piece. The illustration is intended to give the idea of a magnifying glass showing details of construction. These boots are patented—United States No. 895,284—and other designs and patents are being applied for. The name of the boot is protected by copyright. The rubber part of these boots is made by one of the principal rubber shoe factories. They are placed on the market by the owners of the patents, Mulconroy Co., Incorporated, Philadelphia.

THE MERIT OF RUBBER MATS.

AN important rubber firm specializing in the line of goods referred to states: "No other form of floor covering so thoroughly and satisfactorily fills the bill as rubber mats and matting. They are sanitary, noiseless, odorless, durable, economical and attractive, thereby filling every requirement of a modern floor covering. No other material combines these necessary and desirable features. - - - These goods are especially adapted for use in public and private buildings, institutions of all kinds, libraries, schools, churches, office buildings, banks, railroad stations, elevators, carriages, automobiles, boats, and in fact wherever a serviceable, sanitary and economical covering is desired."

The same company advise their patrons:

"When ordering lettered mats, do not use too much wording. A mat filled with letters is not effective. Letters smaller than 3 inches long do not show to advantage. In order to calculate how many letters you can place on a line, bear in mind that a letter occupies a running space about equal to its height, and that 5 inches on each side and at either end is taken up by the border of the mat. - - - We are frequently asked how long and how wide we can make perforated mats. We can make them

any length desired, and in width up to 12 feet, but as a matter of fact, no mat of this kind should be over 6 feet wide, and even 3 or 4 feet is a much more practical size."

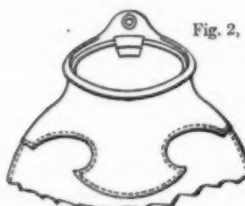
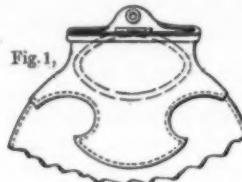
THE AMAZON RUBBER SYSTEM.

[FROM THE "BULLETIN OF THE AMERICAN REPUBLICS."]

AN intelligent survey of "The Rubber System of the Amazon," as published in THE INDIA RUBBER WORLD for July 1, 1909 [page 347], is made by Gustav Heinsohn. Primarily designed as a clear statement of the writer's views in regard to the so-called rubber valorization project, many instructive facts as to the gathering and marketing of this valuable commodity are furnished. It also corrects a mistake too prevalent abroad that "Amazon rubber is obtained by haphazard methods by ignorant denizens of the forest." To support the contention it is asked: "If it were not for a well organized system how could Pará show a certain and well sustained and annually growing export of rubber?"

FOUNTAIN SYRINGE IMPROVEMENT.

PATENTS have recently been granted for an improved fountain syringe bag, which will be appreciated by users, and no doubt interest rubber sundries manufacturers. In recent years there has been an increased demand for bags with larger openings or inlets, in order to permit of cleansing the inside, also to facilitate easy filling from a pitcher or other vessel. For hospital or general use, physicians advise bags with large inlets. Most bags made heretofore, whether with small or large openings, have been limp at the top, making it necessary to hold them open when being filled. If made with a wide inlet the sides hang down, often spilling a portion of



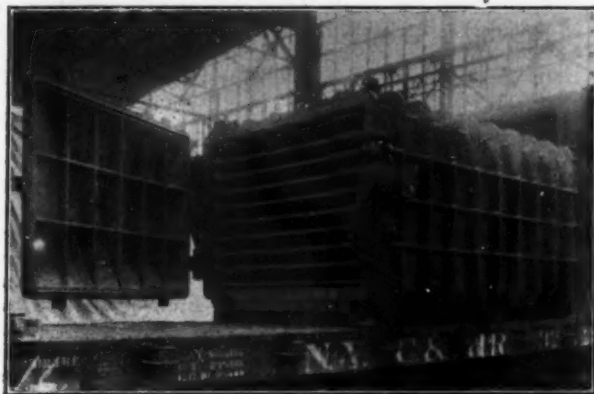
PEARL'S BAG DISTENDING RINGS.

the contents. The Pearl patents cover distending rings hinged to the inside of the bag, opening the ring readily folding down into the bag when the syringe is boxed, as indicated by the dotted lines in Fig. 1. When in use the ring is drawn up firmly into the bag neck, forming a rigid edge, as shown in Fig. 2. Distending rings are also made in various sizes so formed that they may be sprung into the bag inlet and firmly held without being hinged. These rings are made of nickel plated wire, celluloid, hard rubber and aluminum, also wire covered with rubber tubing, depending on the quality of bags fitted. These bag distending rings are the invention of Eugene Pearl, No. 23 Union square, New York.

THE president of Brazil, on August 5, signed decree No. 7485, authorizing the operation in that republic of Deutsch-Südamerikanische Telegraphen-Gesellschaft, A.-G., formed in Germany with 4,000,000 marks [= \$952,000] capital, to lay a cable from Borkum to Teneriffe, and thence to Brazil.

A NEW TYPE OF VACUUM DRYER.

AN improved vacuum drying apparatus recently designed is herewith shown. It has been customary in the past, with dryers as large as this one, to use a circular boiler plate shell, with rectangular heating shelves, which required a large floor space and caused much waste space between the shelves, and the shell had to be evacuated each time the dryer was put in operation. On the smaller size dryers it has been the custom to make the chambers rectangular, of cast iron, built up in sections. This necessitates many joints which have to be maintained, each joint causing additional danger to the maintenance of a high vacuum, and that a high vacuum is necessary is shown by the fact that the higher vacuum obtained on the



A NEW VACUUM DRYER.

apparatus the quicker the drying can be accomplished. The vacuum chambers on the dryers here shown are cast in one piece. The chambers are made of "air furnace iron," which is an exceedingly dense, homogeneous metal, having a tensile strength of approximately 36,000 pounds per square inch. As will be remembered, ordinary cupola iron rarely exceeds 23,000 pounds per square inch. Because of the great density of air furnace iron, manufacturers of ammonia and high pressure cylinders are using it on account of being able to maintain a higher pressure in cylinders, due to the fact that the air cannot get through the molecules of the metal. It will therefore be seen that a higher vacuum can be obtained in the drying chamber if casings are made from this iron. This vacuum dryer is made by the Buffalo Foundry and Machine Co., of Buffalo, New York.

FIRE FIGHTING IN NEW YORK.

THE chief of the fire department of New York, Edward F. Croker, a member of the service for 25 years, in a recent interview in the *New York Herald*, expressed the highest appreciation of the high pressure system now in vogue in New York, and the use of water towers.

"Have fire-fighting methods improved much since you first came to the department?" the interviewer asked.

"The development of methods of fighting fires," said Chief Croker, "has reached a point where, for a time, I do not expect them to go much further. More attention should now be given to fire prevention.

Asked if he favored limitation in the height of "skyscrapers," Mr. Croker said:

"Yes, I do. Fires cannot be surely controlled at any higher than 75 feet. No building should be allowed that goes any higher than seven stories, or they are liable to be dangerous."

At the same time the fire chief pointed out the advantage which New York possesses in the matter of water supply, and the liberal provision of apparatus, enabling 200 engines to be concentrated on any point within an hour.

The matter of fire hose was not mentioned in the full-page article from which these quotations are made, but it would appear from the tone of his interview that the best hose yet made by the rubber manufacturers will not, in the opinion of Mr. Croker, together with the best apparatus yet designed for use in connection with it, insure a reasonable degree of safety for buildings above a certain height. And yet buildings several times 75 feet tall are being erected every year. The hope of the future, then, as he says, is fire prevention.

GOOD RUBBER FROM MEXICO.

THE production of rubber has begun on the plantation "Doña Maria," of Tapachula Rubber Co., at Escuintla, Chiapas, Mexico. A recent report was that they had ready for shipment over 3 tons of rubber, coagulated in thin sheets and pressed into blocks of 25 kilograms, and branded "Doña Maria." A specimen sent to *THE INDIA RUBBER WORLD* is clean and otherwise very desirable rubber. The American domicile of the company is at San Francisco.

HEALTH IN THE RUBBER COUNTRIES.

IN a lecture on "The Panama Canal," at the West India Committee Rooms in London, on March 25, before a meeting presided over by the Governor of Trinidad and Tobago, Vaughan Cornish, F. R. G. S., an engineer of note who had devoted much study to the Canal Zone, said:

Whatever may be thought of the engineering principles involved in the present plan of the Panama canal, there can be no doubt whatever that the sanitation work of the United States has been a magnificent success, and that it has most important bearings on the future of the white race in tropical lands.

This assertion is commended to whoever may be interested in the development of the rubber interest in the South American tropics on a more extensive scale and more economically than in the past. The present Panama canal enterprise is by no means the first attempted in the same region, but the former efforts resulted in failure as much, as for any other reason, on account of the ravages of disease which sanitary science is now able to combat. To recur to the rubber areas, the work "Album do Estado do Pará" [see *THE INDIA RUBBER WORLD*, July 1, 1909—page 349] contains some facts of note regarding the improvements which have been made from a standpoint of health in the regions of which Pará is the capital. It says: "Even yellow fever, whose name has done so much to cast discredit on our country, has nearly completely disappeared from Santos and Rio de Janeiro. If there are occasionally a few sporadic cases in the north of Brazil, they are now few and far between, owing to the progress made by hygiene which enables us to counteract the deadly effect of all diseases, whether they occur in Europe, in America, in high or low latitudes."

The Pará publication continues: "The plain truth is that man lives just as well in Brazil as in Europe," and statistics are given to indicate that the death rate of Pará is lower than in St. Petersburg, Madrid, Venice, Marseilles, or Rome, and not much higher than in New York or Paris. This favorable condition for Pará, however, represents a great improvement over what existed when rubber was first obtained from that port, and but points to the possibilities of making the whole Amazon valley habitable by white men, who, by the way, in the last half century have found the Mississippi valley in the United States immensely more desirable for home than in the earlier years of the American republic.

PANAMA Rubber, Fruit and Lumber Co., September 9, 1909; capital, \$2,500,000. To grow fruits and for general farming. H. L. Cram, president; H. P. Sweetser, treasurer; Portland, Maine.

News of the American Rubber Trade.

GROWTH OF THE ELLWOOD LEE CO.

THE J. Ellwood Lee Co., established as manufacturing chemists since 1883 at Conshohocken, Pennsylvania, are building a new rubber plant at Spring Mill, on the outskirts of Conshohocken, which they intend to have in operation by January 1. They have planned an up-to-date factory for druggists' sundries, hospital supplies, molded goods, and automobile tires, to be in charge of C. E. Eckrode, superintendent of the company's rubber department. The new plant, it is reported, will consist of a four-story building 85 x 410 feet, a two-story building 82 x 90 feet, a one-story power house 82 x 93 feet, and a one-story forge 17 x 50 feet. The company named have long been specialists in elastic and surgical hosiery and bandages, to which they have added the products of the New Jersey Rubber Specialty Co., operating formerly at Milltown, New Jersey, under the proprietorship of Mr. Eckrode. It appears now that the scope of the Lee company is to be further broadened in a factory at once modern, complete, and extensive.

RUBBER FOOTWEAR FACTORIES RESUME.

THE two factories of the Boston Rubber Shoe Co., at Malden and Melrose, Massachusetts, after the annual shutdown of two weeks, resumed operations early in the month, the grinding department starting on September 7 and the other departments in the regular order thereafter. The same schedule was observed at the two factories of the Woonsocket Rubber Co. The boot and shoe making departments of the Goodyear's Metallic Rubber Shoe Co. and the Goodyear's India Rubber Glove Manufacturing Co., at Naugatuck, Connecticut, started to work on August 31, after the usual shutdown. Work was also resumed at the same date in the druggists' sundries department of the latter, after a brief period of idleness. The factory of the National India Rubber Co., at Bristol, Rhode Island, ended its annual shutdown on August 30.

GROWTH OF THE B. F. STURTEVANT CO.

THE B. F. Sturtevant Co. (Boston) formerly capitalized at \$500,000, have been reorganized under the corporation laws of Massachusetts with \$1,250,000 6 per cent. cumulative preferred stock and \$1,250,000 of common stock, and the stock has all been taken. John Carr, chairman of the board of directors of the First National Bank of Boston, is president of the company; Eugene N. Foss, treasurer, and E. B. Freeman, general manager. The fan and blower business of the Sturtevant company, so well known in the rubber industry, has increased to such an extent as to have made necessary during the past year the erection at Hyde Park of a new plant at a cost of more than \$1,500,000, and it is understood that the company contemplates addition building in the spring.

CONTROL OF THE B. & R. RUBBER CO.

A MAJORITY of the stock of the B. & R. Rubber Co. (North Brookfield, Massachusetts) is now held by Messrs. Thomas G. Richards and Charles C. Beebe, the founders of the company in 1906, and since holders of the principal official positions. These gentlemen were recently purchasers of considerable stock from individual holders, in addition to which they have purchased the shares held by the North Brookfield Industrial Association—\$7,000 in preferred and \$3,500 in common stock.

CENTRAL CITY RUBBER CO. (SYRACUSE, N. Y.)

THIS company, recently incorporated [see THE INDIA RUBBER WORLD, August 1, 1909—page 403], has been formed to do a jobbing business in mechanical rubber goods, and

automobile, motorcycle, motor boat, and bicycle supplies. They will also do a retail business in Syracuse. David A. Gould is president, George H. Lloyd, vice-president and general manager, and John R. Graham, secretary and treasurer—all in the employment of Frank C. Howlett's rubber store for upwards of 15 years. These officers and A. Park Sager and Daniel A. Pierce, all of Syracuse, make up the board of directors. Location, No. 129 East Water street.

RUBBER GOODS MANUFACTURING CO.—DIVIDEND.

THE directors of the Rubber Goods Manufacturing Co., on September 8, declared the forty-second regular quarterly dividend of 1¼ per cent. on the preferred stock, from net earnings, payable September 15. The amount to be disbursed was \$181,149.50.

AMERICAN LINSEED CO.—CONDITION IMPROVING.

THE directors report profits for the year ended July 31, 1909, before deducting interest, of \$1,264,184.99, and after deducting interest and depreciation charges of \$979,600.82. This has permitted them to cancel the former deficit and to carry to reserve practically \$100,000. Last year's American crop of flaxseed was not sufficient for the home demand, owing to unfavorable weather, and for the first time in years seed was imported from Canada and Argentina. The price of seed during the year ranged from \$1.20 to \$1.80, and the price of oil from 38 to 60 cents. The stocks of both, at the end of the business year, were the lowest since 1901. The outlook for the current year is reported favorable, as to average and condition of the seed crop and the prospective consumption of oil. The capital of the company is \$16,700,000 each in preferred and common shares. The last dividend reported was 1¼ per cent. on the preferred, September 1, 1900. Stock quotations have improved, as follows: Preferred: high 1909, 47¾; high 1908, 36¾; low 1909, 29; low 1908, 17. Common: high 1909, 20; high 1908 17¼; low 1909, 12; low 1908, 5¾.

TRADE NEWS NOTES.

THE BOSTON BELTING CO. recently made in one continuous length 1,170 feet of their Forsyth braided hose. This is the longest continuous length of hose, it is said, which has ever been produced, and is an indication that the Boston Belting Co. are fully equipped to meet the growing demand for long length hose. For years, efforts have been made to make hose in such lengths as this, but it has only recently been achieved.

At the plant of the Electric Hose and Rubber Co. (Wilmington, Delaware) recently the cement house caught fire, causing an explosion of gasoline which led to damage of about \$1,600, covered by insurance. Repairs to the building were at once made.

The Hartford Rubber Works Co. (Hartford, Connecticut) have issued a correction of the statement that they were the purchasers recently of the Pope Tube Works, from the United States Steel Corporation. The tube plant, which was built under the directions of the late Colonel Albert A. Pope and which was acquired by the Steel Corporation several years ago, has been idle for a considerable period, although it has been kept in excellent repair. The works have been purchased, however, by the Pope Manufacturing Co.

The R. H. Smith Manufacturing Co. (Springfield, Massachusetts) state that the first complete rubber stamp making plant ever exported from the United States was shipped by them to South America in 1873, since which time they have sold their supplies in every part of the civilized world.

TO MAKE "ARTIFICIAL RUBBER."

NORTH American Rubber Co., organized under the laws of Maine, with \$5,000,000 capital stated, claim "a process for the manufacture and production of crude rubber by means of chemicals, whereby it can place on the market a rubber which ranks with a fine grade African gum." It is stated that the company have orders "from large and well-known users of rubber" for all that they can produce, at \$1 a pound, and that it is expected to have a factory, with a daily capacity of a ton a day, operating by January 1, next. Wheeler & Shaw, Inc., Boston, are offering the company's shares.

ELSTON E. WADBROOK.

SHORTLY after the publication of this number, Mr. Elston E. Wadbrook, who for a number of years has successfully administered the business of Poel & Arnold, at their Boston office, will be established at the New York headquarters. Mr. Wadbrook's experience in crude rubber dates back many years, and his knowledge of conditions, particularly Brazilian, is very complete. It was somewhere about 1886 that he went to Rio Janeiro for the London and Brazilian Bank, to learn the banking end of the



ELSTON E. WADBROOK.

rubber business, and indeed, of all commodities, both of import and export. He first came into direct touch with the crude rubber trade in 1896, when he went to Pará for R. F. Sears & Co., remaining there about two years. On his return he was connected with the Crude Rubber Co., in New York, for a time, and then went to Boston with Reimers & Co., with which firm, under its later name of Poel & Arnold, he has continued. Mr. Wadbrook's acquaintance with rubber and the buyers thereof is well nigh universal. He was one of the founders of the New England Rubber Club, and has been one of the officers since its inception. He brings to New York much knowledge, wide acquaintance, the esteem of the whole New England trade and a fine record at golf.

OBITUARY NOTES.

WALTER F. PHILLIPS, only son of H. O. Phillips, president of the Phillips Insulated Wire Co., (Pawtucket, Rhode Island), lost his life in an automobile accident in which five companions were injured on September 1. He was a student at Phillips Exeter Academy, and 20 years of age.

F. B. Nickerson, who for several years had been in charge of the rubber department of the wholesale shoe house of Nathaniel Fisher & Co., in New York, died on August 29, after having been in ill health for several months. He had been

connected with the house since 1881, and is survived by a son, also connected with the house.

TRADE NEWS NOTES.

THE regular meeting of directors of the United States Rubber Co. for the declaration of dividends of the first preferred stock is scheduled for Thursday, October 7.

La Crosse Rubber Mills Co. (La Crosse, Wisconsin) are reported to be very busy, and making alterations with a view to doubling their capacity in the near future.

Elwyn C. Fish, long connected with the National India Rubber Co. factory (Bristol, Rhode Island), has become superintendent of the Elkhart Rubber Works, at Elkhart, Indiana.

Joseph Dixon Crucible Co. (Jersey City, New Jersey) have obtained in the United States circuit court a perpetual injunction restraining the Excelsior Supply Co., of Chicago, from offering for sale any graphite product not made by the Dixon company, in packages marked with red labels or otherwise resembling the Dixon packages.

The directors of the Manufactured Rubber Co. (Philadelphia) declared the regular quarterly dividend of 1½ per cent. on the preferred stock, payable on September 1.

E. A. Kendall, representing the Congress Shoe and Rubber Co. (Boston), is mentioned in a Massachusetts newspaper as having been visiting the trade in the Berkshires for 43 years, which makes him one of the oldest traveling salesmen in the country in any line.

Barker G. Hamill, secretary and treasurer of the Trenton Trust and Safe Deposit Co., has been elected a director of The Acme Rubber Manufacturing Co. (Trenton, New Jersey). Mr. Hamill succeeded his father, the late Hugh H. Hamill, as secretary and treasurer of the Trust company mentioned, and he is now a director in 14 corporations.

Mr. Albert N. Stanley, manager of the local tire agency of The Fisk Rubber Co., has been elected president of the Motor Accessories Association of St. Louis.

The Durham Rubber Co., Limited (Bowmanville, Ontario), are having plans made for an extension to their plant.

The Hartford Rubber Works Co. (Hartford, Connecticut) have received reports on the satisfaction given by their Midgely tread tires on the automobile gun carriage in use at the Northwestern Military Academy, at Highland Park, Illinois. The tire has notably prevented skidding on the asphalt streets. The Hartford works were recently working on a 24-hour schedule owing to the heavy demand for tires.

PERSONAL MENTION.

MR. ALEXANDER JOHNSTON, general works superintendent of the North British Rubber Co., Limited of Edinburgh, was a visitor to the United States during the past month.

Dr. Carlos de Cerqueira Pinto, of Pará, Brazil, the interesting results of whose researches in crude rubber in the Amazon regions have been reported on at some length in THE INDIA RUBBER WORLD of late, after a visit of several weeks to the United States, sailed on September 15 on the *Mauretania*, for London, whence he intended taking a steamer for Brazil.

Mr. Jules Amando Mendes, long identified with the rubber trade at Pará and a recent visitor to the United States, sailed for home on September 13, via Barbados, on the steamer *Suriname*.

Mr. Ernest E. Buckleton, secretary and general manager of Northwestern Rubber Co., Limited, of Liverpool, is expected to reach the United States about the middle of this month for a brief visit.

Mr. M. Wachter, formerly connected with an important American rubber factory, later at Yokohama, Japan, with an insulated wire works, and now in Germany with a company in the same interest, is contributing to the *Gummi-Zeitung* (Berlin) an interesting series of articles on "Die Fabrikanten der Gummi-drähte und Kabel" (the manufacture of rubber wires and cables).

BOSTON WOVEN HOSE IN CHICAGO.

THE Boston Woven Hose and Rubber Co. report that the increasing volume of western trade has made it necessary to increase their sales force and facilities for handling trade in and about Chicago. R. T. Davis, Jr., who has heretofore been in charge of their Cleveland office, will assume charge of the Chicago office and warehouse, and, with a large staff of assistants, will attend to the trade of the surrounding country. Mr. Huxley will devote his entire attention to the city of Chicago. The entire building, Nos. 667-699 West Lake street, is occupied with a very large and complete stock of the company's product, which stock will be further increased. Mr. Davis has been with the company for many years and is well known to the trade throughout the middle west.

MCTERNAN RUBBER CO.—A NEW COMPANY.

THE McTernan Rubber Co., incorporated recently under the laws of Maine, have acquired the Commonwealth Rubber Co. plant at Reading, Massachusetts, and equipped it for the manufacture of druggists' sundries. At its head is Andrew McTernan, who, upon leaving school, entered the employ of the Tyer Rubber Co. (Andover, Massachusetts),



ANDREW MCTERNAN.

with whom he remained until recently. Latterly, and for a number of years, he had been superintendent of the Tyer factory. Mr. McTernan was chosen to represent the Andover district in Massachusetts at the last general election.

The Commonwealth Rubber Co., referred to above, were incorporated in Maine, June 8, 1905, with \$500,000 capital authorized. They secured the plant at Reading occupied by the Chauncy Rubber Co. until 1889, and later operated under several different names. The Commonwealth company were heard from principally in connection with exploiting the Mitchell punctureless pneumatic tire, in 1906.

CONTINENTAL CAOUTCHOUC CO.—NEW APPOINTMENTS.

THE position of sales manager of the Continental Caoutchouc Co. (New York) has been filled by the appointment of O. S. Tweedy, for many years manager of the Chicago branch of The Diamond Rubber Co., and more recently with the Federal Rubber Co. (Cudahy, Wisconsin). General Manager Joseph M. Gilbert announces also the appointment of E. E. McMasters as general representative of the company in the West and Harry Sheldon as general representative in the East; also E. H.

Kidder as branch manager in Boston and Sam S. Poor in Philadelphia.

A NEW FIRM IN CRUDE RUBBER.

FRANCIS R. HENDERSON announces that the crude rubber business formerly conducted by him at No. 82 Beaver street, New York, will be continued under the firm name of Henderson & Korn, at the same location, Mr. Henderson having associated himself with Mr. Ernest A. Korn, who for a number of years was connected with Hagemeyer & Brunn, of New York, gaining a wide experience in Pará grades. Mr. Korn is at present in Manáos on business of the firm.

NEW FIRM IN THE WASTE RUBBER TRADE.

THE two firms, Erie Iron and Metal Co. and B. A. Zacks & Sons, dealers in scrap rubber and other waste materials at Erie, Pennsylvania, have combined their interests and formed a corporation styled Erie Iron and Steel Co., at Twentieth and Ash streets, Erie. The officers are: B. Emerman, president; B. A. Zacks, vice-president; J. H. Zacks, secretary; I. H. Emerman, treasurer; Henry Zacks, assistant secretary.

TIRE TRADE NOTES.

THE Empire Tire Co. (Trenton, New Jersey) have opened a branch at No. 322 North Broad street, Philadelphia, in which city the trade hitherto had been supplied through a jobbing house. E. B. Richardson is manager of the new branch.

Continental Caoutchouc Co. have located their Boston branch at a new location, No. 895 Boylston street. Mr. E. H. Kidder is the resident manager.

Morgan & Wright (Detroit, Michigan) on September 1 removed their Minneapolis branch to more commodious quarters, at No. 911 First avenue, S.

R. S. Ireland has been made sole sales manager of the Ajax-Grieb Rubber Co., with headquarters at Broadway and Fifty-seventh street, New York.

O. L. Weaver has resigned the position of Cincinnati branch manager of the Goodyear Tire and Rubber Co., which he held for six years, to become connected with the sales department of the Overland Automobile Co. (Indianapolis, Indiana).

The Diamond Rubber Co. (Akron, Ohio), who have not been producing motor cycle tires hitherto, announce that they are about to take on the manufacturing of such goods.

With reference to reports of troubles in motoring due to the heating of tires, the manufacturers of Dixon's flake graphite suggest the use of this material on the inner tube, to lessen the friction of the same on the tire casing.

Mr. J. B. Kavanaugh has resigned from the position of New York manager of The Fisk Rubber Co. on account of ill health, with the idea of resting for a year. He was formerly in the employ of The Hartford Rubber Works Co.

The Goodyear Tire and Rubber Co. (Akron, Ohio) report their production of bicycle tires to be more active than for several years past. They refer to more than 400 dealers—one to a town—now handling these tires. They have closed contracts for 1910 equipment with some large cycle manufacturers.

The automobile tire department of the Republic Rubber Co. (Youngstown, Ohio) was reported lately to be experiencing the busiest season since its establishment. For some time it had been operated three nights in each week.

Hagstrom Brothers Manufacturing Co., Inc. (Lindsburg, Kansas) recently voted to increase their capital stock from \$50,000 to \$150,000, particularly with reference to increasing the output of the rubber automobile tire sleeves which were illustrated in THE INDIA RUBBER WORLD in July (page 331). In addition to automobile rubber sleeves they are planning to put out a tire sleeve of similar description for motor cycles.

UNITED STATES RUBBER CO.'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for five weeks, ending September 25:

COMMON STOCK, \$25,000,000.

[Less \$1,344,000 in treasury of a subsidiary company.]

Last Dividend, April 30, 1909—1%.

Week August 28..	Sales 40,800 shares	High 56	Low 50½
Week September 4	Sales 15,775 shares	High 53¾	Low 52
Week September 11	Sales 11,300 shares	High 52¾	Low 50
Week September 18	Sales 20,850 shares	High 54¾	Low 50¾
Week September 25	Sales 27,360 shares	High 56	Low 53½

For the year—High, 57½, Aug. 19; Low, 27, Feb. 24.

Last year—High, 37½; Low, 17½.

FIRST PREFERRED STOCK, \$36,263,000.

Last Dividend, July 31, 1909—2½%.

Week August 28..	Sales 16,150 shares	High 123½	Low 118½
Week September 4	Sales 3,210 shares	High 120½	Low 119½
Week September 11	Sales 1,750 shares	High 120	Low 118½
Week September 18	Sales 2,600 shares	High 120½	Low 118¾
Week September 25	Sales 5,825 shares	High 123¼	Low 120½

For the year—High, 123½, Aug. 24; Low, 98, Jan. 29.

Last year—High, 108; Low, 76.

SECOND PREFERRED STOCK, \$9,965,000.

Last Dividend, July 31, 1909—1½%.

Week August 28..	Sales 4,425 shares	High 89½	Low 87
Week September 4	Sales 300 shares	High 87¾	Low 87½
Week September 11	Sales 1,500 shares	High 88	Low 86½
Week September 18	Sales 750 shares	High 87¾	Low 87
Week September 25	Sales 2,590 shares	High 89¼	Low 87¾

For the year—High, 89½, Aug. 23; Low, 67½, Feb. 25.

Last year—High, 75½; Low, 42.

SIX PER CENT CERTIFICATES, \$20,000,000.

\$15,000,000 issued.

Week August 28..	Sales 50 certs.	High 105½	Low 105
Week September 4	Sales 62 certs.	High 105¼	Low 105
Week September 11	Sales 21 certs.	High 105½	Low 105
Week September 18	Sales 97 certs.	High 105½	Low 104¾
Week September 25	Sales 97 certs.	High 105	Low 104¾

NEW INCORPORATIONS.

UNION RUBBER AND SUPPLY CO., August 6, 1909, under the laws of Missouri; capital, \$10,000, fully paid. Incorporators: Joseph S. Tracey (140 shares), Fred W. Brand (40 shares), John Coughlin (20 shares). Location, St. Louis.

This business was organized in 1902 as a copartnership, under the style, Union Supply Co., by Joseph F. Tracy and J. Frank Morrison. The new corporation has these officers: Joseph F. Tracy, president; John Coughlin, vice-president; Fred W. Brand, secretary and treasurer. Location, No. 410 Market street. A complete stock of mechanical rubber goods is carried, including leather and canvas belting.

Rubber Novelty Manufacturing Co., July 12, 1909, under Ohio laws; capital, \$10,000. Incorporators: C. D. Huber, George E. Gorz, F. O. Williams, Clarence A. Lindsay, and H. A. Mykrantz. Location, Ashland, Ohio.

Trenton Rubber Manufacturing Co., July 31, 1909, under New Jersey laws; capital, \$2,000. Incorporators: Joseph O. Stokes, William J. B. Stokes, and Francis C. Lowthrop. Location, Trenton, New Jersey. The former Trenton Rubber Manufacturing Co. recently adopted the name Thermoid Rubber Co. [see THE INDIA RUBBER WORLD, July 1, 1909—page 370], and the new corporation has been formed by the same interest for the sake of more fully protecting their interest in the goodwill of the old corporation.

Morgan & Wright, a corporation of Michigan, have qualified to do business in Illinois as a foreign corporation, under date of June 23, 1909. Charles J. Butler is president and J. P. Weston secretary, both of Detroit, Michigan.

West American Rubber Co., September 1, 1909, under the laws of California; capital authorized, \$50,000. Directors: V. C. Benjamin, William T. Gotbed, Caroline A. Benjamin, John D. Works, Lewis R. Works. Location, Los Angeles, California.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

THE following is an official statement of value of exports of manufactures of india-rubber and gutta-percha from the United States for ten fiscal years, ending June 30:

YEARS.	Belting, Packing and Hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
1908-09	\$1,498,445	\$1,292,673	\$3,823,956	\$6,615,074
1907-08	1,347,775	1,614,290	3,743,040	6,705,105
1906-07	1,253,369	1,231,898	3,729,643	6,214,910
1905-06	1,221,159	1,505,082	2,966,144	5,692,385
1904-05	994,100	1,214,342	2,572,375	4,780,817
1903-04	879,476	1,086,364	2,469,750	4,435,590
1902-03	819,985	1,056,491	2,299,875	4,176,351
1901-02	634,146	1,046,315	1,781,941	3,462,402
1900-01	565,726	724,015	1,727,527	3,017,268
1899-1900	541,830	420,746	1,405,212	2,367,788

The exports for the last fiscal year compare with the previous year as follows:

Decrease in boots and shoes	\$321,617
Increase in belting, etc.	\$150,670
Increase in miscellaneous	80,916
	231,586

Net decrease

Exports of rubber boots and shoes (in pairs) have been as follows, by fiscal years ended June 30::

1901	1,459,100	1904	2,310,808	1907	2,310,420
1902	2,594,708	1905	2,390,539	1908	3,080,253
1903	2,307,401	1906	2,693,670	1909	2,397,435

Exports (in value) of reclaimed rubber and of waste rubber have been as follows:

	Reclaimed.	Waste
1908-09	\$414,861	\$402,897
1907-08	418,738	449,727
1906-07	665,109	548,695
1905-06	511,843	339,507
1904-05	522,902	204,945

IMPORTS INTO THE UNITED STATES.

YEARS.	India-rubber.	Gutta-percha.	TOTAL.
1908-09	\$1,391,770	\$71,819	\$1,463,589
1907-08	1,956,590	93,545	2,050,135
1906-07	2,262,783	191,064	2,453,847
1905-06	1,992,413	208,172	2,200,585
1904-05	1,389,064	117,735	1,506,799
1903-04	821,562	335,480	1,157,042
1902-03	665,972	225,198	891,170
1901-02	449,756	127,780	577,536
1900-01	478,663	163,337	642,000
1899-1900	564,088	254,332	818,420

SHIPMENTS TO NON-CONTIGUOUS COUNTRIES.

For the fiscal year ended June 30, 1909:

TERRITORIES.	Belting, Packing and Hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
Alaska	\$96,909	\$181,132	\$20,042	\$298,083
Hawaii	45,031	11,332	101,092	157,455
Porto Rico	9,277	308	69,936	79,521
Philippines	39,691	2,204	73,652	115,547
Total	\$190,908	\$194,976	\$264,722	\$650,606
Total, 1907-08	162,602	235,044	217,801	615,447
Total, 1906-07	197,508	215,630	167,488	580,626
Total, 1905-06	164,606	179,210	151,260	495,260
Total, 1904-05	107,356	181,204	110,314	398,874

It is nearly four years since motor fire appliances were first introduced in the city of Glasgow, Scotland, and a recent United States consular report states that "the results have been so satisfactory, from every point of view, that it is the intention to gradually substitute motor fire vehicles for steam fire engines, so that ultimately horse and steam power will be entirely dispensed with."

RUBBER FOOTWEAR PRICES HIGHER.

THE United States Rubber Co., under date of September 20, advised the trade of new discounts on rubber footwear, which has the effect of a material advance in prices, which it is stated has become necessary on account of the unprecedented high cost of crude rubber. The change in discounts consists of 20 per cent. being allowed now, as against 25, in the initial discount on each item in the company's lists. The Hood Rubber Co. have issued new price lists of the same date, with a similar change in discounts. The same is true of the Apsley Rubber Co. It may be stated, indeed, that the advance in footwear is general, in keeping with the upward movement of prices for rubber manufactures of all kinds.

RUBBER PRODUCTION IN AFRICA.

THE Prospects and Possibilities of Rubber Cultivation in West Africa" was the subject of an address before the African Trade Section of the Liverpool Chamber of Commerce, on July 12, by Mr. J. J. Fischer, who has long been engaged in the crude rubber trade at Liverpool. He is largely interested in trade generally with West Africa, in which region he once spent 20 years, besides which he has made many visits to the coast. Mr. Fischer is now managing director of the West African Rubber Plantations, Limited.

Funtumia elastica, a rubber tree indigenous to a large part of Africa, is highly regarded by Mr. Fischer. It yielded a large part of the production of the Gold Coast and Lagos in the days of the greatest export from those colonies. Since then the supply has gradually diminished, because the natives had cut down so many trees. After the government began to insist upon the trees being tapped, this was done so badly in many cases that the trees soon died. Now *Funtumia* is being planted in the British possessions, several years after the Germans made a beginning in Kamerun.

The United States consul at Durban reports that there are in Natal—in Zululand, for instance, large tracts of land suitable for rubber cultivation, but these are allotted only to persons who are British subjects or who may take out letters of naturalization in the colony.

At the London Rubber Exhibition samples of *Funtumia* were shown by Mr. Fischer's company. He said "The rubber was tried on a machine, also on exhibition, and it was found to be the strongest rubber at the exhibition. A strip cut off from a biscuit 5 inches long, 1 inch wide, and about 1/4 inch thick, stretched out to 35 inches, seven times its length, before it broke.

The attendant at the machine said that he had never tested any rubber yet so strong as this."

The Mabira Forest (Uganda) Rubber Co., Limited, Mr. Fischer said, "also exhibited *Funtumia* rubber at the Rubber Exhibition. Their rubber was very black, I was told," said Mr. Fischer, "and not so strong. Since then they have improved the quality and got it paler, and it was sold at the same price recently as Ceylon plantation Pará rubber. If we could succeed in getting it still paler—to a bright amber color—it would fetch 6d. more per pound. This, I believe, is possible. *Funtumia elastica* rubber will, therefore, take the first place, always, provided it is planted and its latex scientifically treated."

The planting of *Hevea* rubber in various parts of Africa is also commended by Mr. Fischer. Several thousands of this species have been planted by the West African Plantations, Limited. The planting of *Funtumia* in certain districts is preferable, because this will succeed with less rainfall than is needed for *Hevea*.

Mr. Fischer devoted some remarks also to "manicoba" rubber (*Manihot*). "The Germans in East Africa," he said, "have found that this is the most remunerative for their country, and I see now that they have stripped £200,000 worth already."

AN American consular official at Hongkong states that there would be very little market in China for rubber boots and overshoes of the patterns sold in the United States, but that if made according to Chinese styles considerable demand exists at the chief distributing ports of Hongkong, Canton, and Shanghai. The value of the imports of rubber footwear into the empire during 1907, the last year for which statistics are available, was \$244,900. With the Chinese the mark or brand (chop) plays an important part, and Americans seeking to build up trade in this line should adopt a distinctive mark, registered in the United States as well as in China, and place it on every shoe.

THE highway commission of Massachusetts are at work upon a census of traffic on the highways of that State. While the returns are not complete, the commission figure that 45 per cent. of the total vehicular traffic is motor driven. Up to September 1 motorists had paid to the State of Massachusetts in registration and license fees \$151,635.52, which amount has been credited to the road maintenance account.

THE *Observer* mentions the visit to Colombo of a young Chinese, Cheah Seng Yeah, who has a 750-acre plantation of rubber and coconuts in Penang. He was finding difficulty in gaining access to the Ceylon rubber estates.

Review of the Crude Rubber Market.

CURRENT quotations for crude rubber are unprecedented. A widespread impression that prices would decline steadily after the midsummer reaction from about \$2 a pound proved unfounded, and throughout the past month an advance has been in progress. Everywhere the story is the same—eager buying at rising prices wherever rubber is available. There are reports of business done in London at about \$2.23; at the last Antwerp sale lots were sold at an advance of a franc per kilogram above brokers estimations.

It is yet between seasons for the arrival of rubber from the Amazon, and no other region is yielding an unusual amount of rubber. The active demand—evidently on an unusual scale—for consumption would alone tend to put up prices at such a time. The effect upon the trade, if present conditions should long continue, would likely prove very serious. But with increased supplies, and with factory

stocks assured until the crop season is well advanced, there can hardly fail to be a reduced level of prices. Meanwhile the cost of rubber goods is being put up by manufacturers everywhere. The effect on prices of speculative trading is not easy to point out at any time, and the position just now is more than unusually complex.

Arrivals of rubber (including caucho) at Pará for the first three months of the crop year have been:

	1906.	1907.	1908.	1908.
July	1,840	1,370	1,300	1,400
August	1,690	1,500	1,800	1,870
September	2,070	2,410	2,355	21,860
Total	5,600	5,280	5,545	5,130
[a—To September 28, 1909.]				

TO THE EDITOR OF THE INDIA RUBBER WORLD: In view of the prevailing high prices for rubber I think that the people in the Amazon regions will exert themselves this season to produce an unusually large crop. Receipts

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at Pará, however, since the beginning of the crop year, have been lower than normal, due to unsettled conditions in the buying trade there. Manãos at present I believe to have a good stock of rubber in first hands.

As I understand the situation, the exporters at Pará, within a couple of months, expecting a decline in prices with the arrival of new rubber, made sales for forward delivery on a very low basis. They figured on the *aviadores*, as usual, being in need of money to meet their bills, and ready to sell rubber arriving in the new crop at prices dictated to them. Furthermore the buyers reached an agreement to remain out of the market to a certain extent, and it is stated that they were able to arrange with the shipping lines to reduce the frequency of sailings to Europe and New York all with a view to bringing the *aviadores* (consignees) at Pará to terms.

While the result of the action here outlined has been to reduce the export of rubber below the extent which otherwise would have been probable. This condition is not likely to continue. Already the *aviadores* have been planning to act in concert, and with financial assistance from the Banco do Brazil, the export houses then seem likely to find their control of the Pará rubber market much lessened. The success of the *aviadores* does not mean, necessarily, lower prices of rubber, except in so far as a decline may follow the more prompt forwarding of rubber to the world's markets.

September 25, 1909.

S. CLARK.

Following are the quotations at New York for Pará grades, one year ago, one month ago, and September 30—the current date—all prices being practically nominal:

PARÁ.	Oct. 1, '08.	Sept. 1, '09.	Sept. 30.
Islands, fine new.....	94@ 95	@ 168	201@202
Islands, fine, old.....	none here	@ 175	none here
Upriver, fine new.....	102@103	@ 190	213@214
Upriver, fine old.....	106@107	none here	214@215
Islands, coarse, new.....	46@ 47	@ 64	78@ 79
Islands, coarse, old.....	none here	@ 75	82@ 83
Upriver, coarse, new.....	72@ 73	@ 113	131@132
Upriver, coarse, old.....	74@ 75	none here	none here
Cametá.....	52@ 53	@ 83	96@ 97
Caucho (Peruvian), ball..	63@ 64	@ 105	118@119
Caucho (Peruvian), sheet..	53@ 54	@ 86	90@ 91
Ceylon, fine sheet.....	105@106	@ 192	none here
Ceylon, crepe.....	.....	.....	218@220

AFRICAN.

Lopori ball, prime.....	82@ 83	@ 120	128@130
Lopori strip, prime.....	68@ 70	@ 118	none here
Aruwimi.....	.....	@ 106	114@115
Upper Congo ball, red.....	.....	@ 120	125@126
Ikelamba.....	none here	none here	none here
Sierra Leone, 1st quality...	82@ 83	@ 123	123@127
Massai, red.....	82@ 83	@ 123	126@127
Soudan niggers.....	58@ 59	@ 110	112@115
Cameroon ball.....	50@ 51	@ 105	89@ 90
Benguela.....	45@ 46	@ 80	81@ 82
Madagascar, pinky.....	67@ 68	@ 102	97@ 98
Accra flake.....	18@ 19	@ 24	23@ 24

CENTRALS.

Esmeralda, sausage.....	61@ 62	@ 95	100@102
Guayaquil, strip.....	46@ 47	@ 78	85@ 86
Nicaragua, scrap.....	59@ 60	@ 95	99@100
Panama.....	46@ 47	@ 83	84@ 85
Mexican, scrap.....	58@ 59	@ 95	100@102
Mexican, slab.....	42@ 43	@ 80	84@ 85
Mangabeira, sheet.....	43@ 44	@ 66	82@ 83
Guayule.....	29@ 30	@ 45	50@ 51

EAST INDIAN.

Assam.....	75@ 76	95@ 96	none here
Pontianak.....	.....	@ 4 3/4	@ 5 1/4
Borneo.....	27@ 34	@ 40	52@ 53

NEW YORK RUBBER PRICES FOR AUGUST (NEW RUBBER).

	1909.	1908.	1907.
Upriver, fine.....	1.79@1.95	.89@ .96	1.08@1.15
Upriver, coarse.....	1.10@1.20	.65@ .69	.89@ .92
Islands, fine.....	1.65@1.84	.83@ .90	1.04@1.09
Islands, coarse.....	.62@ .75	.43@ .46	.60@ .62
Cametá.....	.80@ .92	.51@ .53	.66@ .69

Rubber Scrap Prices.

LATE New York quotations—prices paid by consumers for car-load lots, per pound—show practically no change since last month:

Old rubber boots and shoes—domestic.....	10 3/4@10 1/2
Old rubber boots and shoes—foreign.....	10 @10 1/4
Pneumatic bicycle tires.....	6 3/4@
Automobile tires.....	6 1/4@ 7
Solid rubber wagon and carriage tires.....	9 @ 9 1/2
White trimmed rubber.....	10 @11
Heavy black rubber.....	6 1/2@ 6 3/4

Air brake hose.....	4 1/2@ 4 3/4
Garden hose.....	3 @ 3 1/8
Fire and large hose.....	3 1/4@ 3 1/2
Matting.....	2 @ 2 1/4

Statistics of Para Rubber (Excluding Caucho).

	NEW YORK.		Total	Total	Total
	Fine and Medium.	Coarse.	1909.	1908.	1907.
Stocks, July 31.....	203	107	230	286	290
Arrivals, August.....	308	192	500	816	487
Aggregating.....	431	299	730	1102	777
Deliveries, August.....	369	205	574	973	537
Stocks, August 31.....	62	94	156	129	240

	PARÁ.			ENGLAND.		
	1909.	1908.	1907.	1909.	1908.	1907.
Stocks, July 31.....	550	250	165	245	200	675
Arrivals, August.....	1610	1490	1380	510	1150	450
Aggregating.....	2160	1740	1545	755	1350	1125
Deliveries, August.....	1250	1435	1255	460	975	500
Stocks, August 31.....	910	305	290	295	375	625

	1909.	1908.	1907.
World's visible supply, August 31.....	1,981	1,655	1,792
Pará receipts, July 1 to August 31.....	2,700	2,570	2,470
Pará receipts of Caucho, same dates.....	580	600	460
Afloat from Pará to United States, Aug. 31	none	438	124
Afloat from Pará to Europe, Aug. 31.....	620	417	513

Liverpool.

WILLIAM WRIGHT & Co. report [September 1]:

Fine Pará.—As was to be expected after the phenomenal rise of last month, there have been considerable fluctuations, but on the whole the market has been wonderfully steady, especially for the later positions, and, all things considered, we think manufacturers will for this season have to reckon on a basis of 6 shillings (= \$1.44) for fine. Present indications point to a further advance in values during next month, owing to small supplies and short sales; but once the squeeze is over, we cannot think that today's level of values can be maintained without severe injury to the trade generally. When all is said and done, supply and demand must regulate prices, and although there is no indication of a slump in prices, still as regards later deliveries a decline of at least 4d. to 5d. per pound is what might be reasonably expected. Manufacturers must bear in mind that all indications point to a record era of prosperity in America, and the American demand is the key to the situation.

Antwerp.

RUBBER STATISTICS FOR AUGUST.

DETAILS.	1909.	1908.	1907.	1906.	1905.
Stocks, July 31.....	524,512	695,551	931,356	531,441	819,559
Arrivals in August.....	229,260	640,712	309,667	587,122	599,389
Congo sorts.....	147,313	522,847	232,522	438,005	375,203
Other sorts.....	81,947	117,865	77,145	140,117	134,126
Aggregating.....	753,772	1,336,263	1,241,023	1,109,563	1,328,948
Sales in August.....	508,921	461,749	500,509	422,696	770,746
Stocks, August 31.....	244,851	874,514	740,514	626,867	558,202
Arrivals since Jan. 1.....	3,162,684	3,473,739	3,501,465	3,933,727	3,719,673
Congo sorts.....	2,325,028	2,952,211	2,986,244	2,998,843	2,911,293
Other sort.....	837,656	520,528	515,221	934,884	808,380
Sales since Jan. 1.....	3,513,568	3,606,119	3,419,135	3,982,047	3,702,832

RUBBER ARRIVALS FROM THE CONGO.

SEPTEMBER 14.—By the steamer *Albertville*:

Bunge & Co.....	(Société Générale Africaine) kilos	55,600
do.....	(Chemins de fer Grands Lacs)	2,600
do.....	(Société Abir)	6,900
do.....	(Comptoir Commercial Congolais)	19,100
do.....	(Comité Spécial Katanga)	5,200
do.....	(Cie. du Kasai)	73,700
Société Coloniale Anversoise.....	(Belge du Haut Congo)	1,100
do.....	(Sud Cameroun)	5,100
Cassart & Henrion.....	.....	20 169,320

AUGUST 17.—By the steamer *Bruxellesville*:

Bunge & Co.....	(Société Générale Africaine) kilos	45,700
do.....	(Comptoir Commercial Congolais)	23,600
do.....	(Chemins de fer Grands Lacs)	300
Société Coloniale Anversoise.....	(Belge du Haut Congo)	13,000
do.....	(Cie. du Lomami)	8,000
do.....	.....	9,500
L. & W. Van de Velde.....	(Cie. du Kasai)	59,000
do.....	.....	2,000 161,100

Rotterdam.

At the inscription of September 2 the offerings amounted to about 63 tons, including 34 tons of various Congo sorts

for account of Nieuwe Afrikaansche Handels Vennootschap; 12 tons Upper Congo for other parties, and several lots of Java plantation, of which 8,700 kilos rambong (*Ficus*) and 185 kilos Castilloa; also 6,750 kilos Niger rubber.

Para.

AUGUST 27.—On account of the unsteady Pará market to-day's auction here has given a rather irregular result and prices paid average by about 5 per cent. lower than valuations. We consider actual level of prices for medium sorts advantageous and fit to induce manufacturers to cover their requirements in these sorts, the more so as quantities offered in next month's auction will likely be very moderate. Also we are of opinion that the Pará market will not show any serious decline in the near future, as supplies at Pará will—as far as can be foreseen at present—remain poor for the next few months.—ZELLER, VILLINGER & CO.

New York.

In regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York) advises as follows: "During September the demand for commercial paper has continued fairly good, at slightly advanced rates, the best rubber names going at 5@5½ per cent., and those not so well known 5¼@6 per cent."

IMPORTS FROM PARA AT NEW YORK.

The Figures Indicate Weight in Pounds.

AUGUST 30.—By the steamer *Boniface*, from Manáos:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
Poel & Arnold.....	43,400	10,900	67,400	300	121,900
A. T. Morse & Co.....	64,100	4,300	7,900	400	76,700
General Rubber Co.....	39,300	6,800	6,900	3,900	56,900
Hagemeyer & Brunn.....	.....	.....	23,100	.....	23,100
C. P. dos Santos.....	1,800	300	700	.....	2,800
Total	148,600	22,300	106,000	4,500	281,400

AUGUST 27.—By the steamer *Acre*, from Pará:

A. T. Morse & Co.....	8,000	700	8,700
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SEPTEMBER 14.—By the steamer *Maranhense*, from Manáos and Pará:

Poel & Arnold.....	204,800	17,200	149,200	20,700	391,900
New York Commercial Co.....	203,900	24,000	74,600	8,000	310,500
A. T. Morse & Co.....	119,000	9,400	58,100	3,900	190,400
Hagemeyer & Brunn.....	47,500	2,100	77,900	.....	127,500
General Rubber Co.....	21,200	9,000	40,100	300	70,500
C. P. dos Santos.....	17,500	1,400	9,900	.....	28,800
Edmund Reicks & Co.....	3,200	.....	2,600	.....	5,800
Total	617,100	63,100	412,400	32,800	1,125,400

SEPTEMBER 14.—By the steamer *Napo*, from Iquitos:

G. Amsinck & Co.....	32,900	.....	6,000	118,800	157,700
Thomsen & Co.....	4,100	.....	300	22,100	26,500
Neuss, Henslein & Co.....	8,000	.....	1,900	.....	9,900
Total	45,000	.....	8,200	140,900	194,100

[NOTE.—The steamer *Justin*, from Pará is due about October 1, with a cargo of 650 tons.]

PARA RUBBER VIA EUROPE.

SEPT. 2.—By the <i>Grant</i> =Hamburg: New York Commercial Co. (Fine).....	7,500
SEPT. 7.—By the <i>Advance</i> =Mollendo: W. R. Grace & Co. (Caucho).....	11,000
SEPT. 9.—By the <i>New York</i> =London: Poel & Arnold (Coarse).....	7,000
SEPT. 15.—By the <i>Majestic</i> =London: Poel & Arnold (Coarse).....	33,500
SEPT. 15.—By the <i>Lincoln</i> =Hamburg: N. Y. Com. Co. (Fine).....	5,500
N. Y. Com. Co. (Coarse).....	9,000
SEPT. 20.—By the <i>Cincinnati</i> =Hamburg: N. Y. Com. Co. (Fine).....	11,500
N. Y. Com. Co. (Coarse).....	9,000
SEPT. 21.—By the <i>Coronia</i> =Liverpool: N. Y. Com. Co. (Fine).....	40,000

OTHER NEW YORK ARRIVALS.

CENTRALS.

[*This sign, in connection with imports of Centrals, denotes Guayule rubber.]

AUG. 21.—By the <i>America</i> =Hamburg: A. T. Morse & Co.....	11,000
AUG. 23.—By the <i>Byron</i> =Bahia: J. H. Rosbach & Bros.....	25,000
New York Commercial Co.....	22,500
AUG. 23.—By the <i>Manzanilla</i> =Tampico: Ed Maurer	*145,000
AUG. 23.—By the <i>Colon</i> =Colon: Isaac Brandon & Bro.....	10,000
Piza, Nephews & Co.....	2,500
A. Rosenthal & Sons.....	2,500
Anderson Trading Co.....	1,000
Mecke & Co.....	1,000
AUG. 24.—By the <i>Antilles</i> =New Orleans: A. T. Morse & Co.....	3,000
AUG. 24.—By the <i>Tudor Prince</i> =Bahia: Poel & Arnold.....	22,500
A. Hirsch & Co.....	15,000
AUG. 25.—By the <i>El Dorado</i> =Galveston: Continental & Mexican Rubber Co.....	*65,000
AUG. 25.—By the <i>Joachim</i> =Colon: J. Sambrade & Co.....	3,000
Cabello & Blanco.....	1,500
A. Held	1,500
Wessels Kullenkampff Co.....	1,500
United Fruit Co.....	1,000
Eggers & Heinlein.....	1,000
AUG. 26.—By the <i>Acre</i> =Natal: A. D. Hitch & Co.....	6,000
AUG. 27.—By the <i>Monterey</i> =Mexico: H. Marquardt & Co.....	3,000

E. N. Tibbals & Co.....	1,500
Graham, Hinckley & Co.....	1,000
E. Steiger & Co.....	1,000
AUG. 30.—By the <i>El Sud</i> =Galveston: E. Boehringer	*11,500
AUG. 30.—By the <i>Monus</i> =New Orleans: Manhattan Rubber Mfg. Co.....	1,500
Eggers & Heinlein.....	1,000
AUG. 30.—By the <i>Panama</i> =Colon: Roldan & Van Sickle.....	4,000
L. Johnson & Co.....	2,000
Henry Mann & Co.....	2,000
Fidauque Bros.....	2,500
Piza, Nephews Co.....	1,500
W. R. Grace & Co.....	1,000
Pablo-Calvert Co.....	1,000
G. Amsinck & Co.....	1,000
Demarest Bros.....	1,000
SEPT. 1.—By the <i>Hugio</i> =Tampico: Ed. Maurer	*75,000
Poel & Arnold.....	*35,000
N. Y. Commercial Co.....	*33,000
Isaac Kubic & Co.....	*34,000
SEPT. 1.—By the <i>Tagas</i> =Colombia: Kugelman & Co.....	4,500
W. R. Grace & Co.....	1,500
J. A. Pauli & Co.....	1,500
Brandon & Bros.....	1,000
Maitland-Cappell Co.....	5,000
Kimhard & Co.....	2,000
Cabello & Blanco.....	1,000
SEPT. 4.—By the <i>Merida</i> =Frontera: Harburger & Stack.....	3,500
General Export Co.....	3,000
E. Steiger & Co.....	1,500
Chilian Trading Co.....	1,000
Graham, Hinckley & Co.....	1,000
SEPT. 4.—By the <i>El Alba</i> =Galveston: Continental & Mexican Co.....	*65,000
SEPT. 7.—By the <i>Advance</i> =Colon: Jose, Julia & Co.....	5,000
G. Amsinck & Co.....	5,000
W. R. Grace & Co.....	1,500
A. Rosenthal's Sons.....	1,500
Eggers & Heinlein.....	1,500
J. Sambrade & Co.....	1,500
Henry Mann & Co.....	1,000
R. F. Barthold.....	1,000
Wessels-Kulenkamp Co.....	1,000
SEPT. 7.—By the <i>Voltaire</i> =Bahia: J. H. Rosbach Bros.....	13,500
A. Hirsch & Co.....	6,500
SEPT. 8.—By the <i>Yumuri</i> =Tampico: Ed. Maurer	*135,000
SEPT. 8.—By the <i>El Rig</i> =Galveston: Continental & Mexican Co.....	*50,000
Ed. Boehringer	*15,000

SEPT. 10.—By the <i>Albanca</i> =Colon: Brandon & Bro.....	17,000
Roldan & Van Sickle.....	6,500
L. Johnson & Co.....	6,500
J. Sambrade & Co.....	4,500
A. Santos & Co.....	3,500
G. Amsinck & Co.....	3,000
Mecke & Co.....	2,500
Demarest & Co.....	2,500
National Seig Mache Co.....	2,000
Elias & Abdo.....	1,500
Suzarte & Whitney.....	1,000
Henry Mann & Co.....	1,000
A. Rosenthal's Sons.....	1,000
SEPT. 10.—By the <i>Grecian</i> =Bahia: J. H. Rosbach & Bros.....	20,000
N. Y. Commercial Co.....	20,000
SEPT. 10.—By the <i>Sigismund</i> =Colon: H. C. Coleman.....	2,000
Schulte & Goschen.....	2,000
A. Held	2,000
Leaux & Co.....	1,000
SEPT. 11.—By the <i>Esperanza</i> =Frontera: Harburger & Slack.....	3,000
E. Steiger & Co.....	1,500
E. N. Tibbals & Co.....	1,000
General Export Co.....	1,000
A. T. Morse & Co.....	1,000
SEPT. 13.—By the <i>Comus</i> =New Orleans: A. N. Rotholz.....	3,000
A. T. Morse & Co.....	3,000
SEPT. 14.—By the <i>Cienfuegos</i> =Tampico: New York Commercial Co.....	*33,000
Ed. Maurer	*33,000
SEPT. 14.—By the <i>El Dorado</i> =Galveston: Continental & Mexican Co.....	*65,000
Ed. Boehringer	*5,000
SEPT. 14.—By the <i>Sibiria</i> =Greytown: G. Amsinck & Co.....	8,000
Jose Julia & Co.....	1,500
Roldan & Van Sickle.....	1,000
Pablo-Calvert Co.....	1,500
A. Rosenthal's Sons.....	1,000
SEPT. 15.—By the <i>Colon</i> =Colon: G. Amsinck & Co.....	4,000
Brandon & Bros.....	3,500
A. Rosenthal's Sons.....	3,000
American Trading Co.....	3,000
Carvalho & Co.....	2,500
Andean Trading Co.....	2,500
J. Sambrade & Co.....	1,000
Henry Mann & Co.....	1,000
SEPT. 16.—By the <i>Monus</i> =New Orleans: A. T. Morse & Co.....	1,500
Eggers & Heinlein.....	1,500
SEPT. 17.—By the <i>Oruba</i> =Colombia: A. M. Capen's Sons.....	4,000
L. Delius & Co.....	2,500
R. Castillos & Co.....	2,000
Kunhardt & Co.....	2,000

RUBBER FLUX

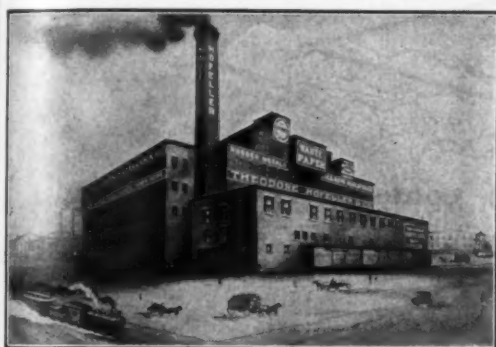
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No. 48. For fluxing pigments in compounding. A valuable adjunct to the manufacture of moulded goods as it DOES NOT BLOW UNDER CURE.

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WALPOLE RUBBER WORKS
WALPOLE VARNISH WORKS
ELECTRIC INSULATION LABORATORY



THEODORE HOFELLER & CO.
BUFFALO, N. Y.

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OLD RUBBER
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MALTA HYDRO-CARBON MINERAL RUBBER

WHY: PUREST 99⁸⁴/₁₀₀%
PREVENTS OXIDIZATION
INCREASES ELASTICITY OF MOULD WORK
ABSOLUTELY UNIFORM IN QUALITY
DOES NOT STICK TO HOT MILL ROLLS

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WRITE NOW FOR FREE WORKING SAMPLE

CHARLES T. WILSON

MEXICAN (Guayule) RUBBER

I invite inquiries from manufacturers on this rubber. Being the direct representative of large producers, I am in position to quote on various qualities for immediate and future delivery.

Telegraphic Address,
"CRUDERUB"

Office,

46 Cortlandt Street,

NEW YORK CITY

Mention The India Rubber World when you write.

GUAYULE

Made by mechanical process only, of strictly fresh shrub.

No chemicals used.



The recognized Standard, practically clean, containing less resin and having greater tensile strength than any other Guayule.



Prepared from high grade "Parra" Guayule, guaranteed uniform, washed and dried, ready for use. Vulcanizes easily without special compounding.

CONTRACTS MADE FOR REGULAR WEEKLY
OR MONTHLY DELIVERIES

For Samples and Quotations apply to

ED. MAURER

97 Water St., NEW YORK

Sole Representative of the MADERO interests in Mexico,

Largest Producers of Guayule Rubber, Operating Nine Factories.

SEP
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Ameri
E. N.
H. M.
Harbu
E. M.
L. M.
SEP
Poel &
SEP
Poel &
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Ed. M.
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A. H.
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J. H.
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Poel &
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Joseph
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A. T.
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SEP
A. T.
Poel &
George
Rubber
Robins

SEPT. 17.—By the California=Mexico: H. Marquardt & Co. 6,500	SEPT. 16.—By the Lincoln=Hamburg: A. T. Morse & Co. 170,000 Poel & Arnold. 27,000 George A. Alden & Co. 15,000 Rubber Trading Co. 8,000 220,000	W. L. Gough & Co. 13,500 O. Isenstein & Co. 28,000 108,500
SEPT. 17.—By the Mexico=Vera Cruz: American Trading Co. 2,000 E. N. Tibbals & Co. 2,000 H. Marquardt & Co. 2,000 Harburger & Stack. 2,000 E. Steiger & Co. 1,000 L. M. Chemedlin Co. 1,000 10,000	SEPT. 18.—By the St. Louis=London: Poel & Arnold. 25,000	SEPT. 20.—By the Minnetonka=London: General Rubber Co. *22,500
SEPT. 18.—By the Campania=Liverpool: Poel & Arnold. 10,000	SEPT. 18.—By the Campania=Liverpool: Poel & Arnold. 60,000 General Rubber Co. 22,500 George A. Alden & Co. 11,000 H. A. Gould Co. 9,000 102,500	SEPT. 21.—By the Caronia=Liverpool: Poel & Arnold. 9,000
SEPT. 20.—By the Zeeland=Antwerp: Poel & Arnold. *55,000	SEPT. 20.—By the Cincinnati=Hamburg: Geo. A. Alden & Co. 8,000 A. T. Morse & Co. 3,000 General Rubber Co. 2,500 13,500	SEPT. 22.—By the Oceanic=London: Poel & Arnold. *90,000 New York Commercial Co. *40,000 A. T. Morse & Co. *2,500 *132,500
SEPT. 20.—By the Manzanillo=Tampico: Ed. Maurer *70,000 New York Commercial Co. *33,000 *103,000	SEPT. 20.—By the Zeeland=Antwerp: Poel & Arnold. 90,000 General Rubber Co. 22,500 George A. Alden & Co. 3,500 A. T. Morse & Co. 2,000 118,000	GUTTA-JELUTONG. Aug. 23.—By the Kennebec=Singapore: Heabler & Co. 125,000 W. L. Gough & Co. 110,000 L. Littlejohn & Co. 100,000 335,000
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SEPT. 21.—By the Panama=Colon: Piza, Nephews & Co. 10,000 W. R. Grace & Co. 4,000 G. Amsinck & Co. 3,500 West Coast Rubber Co. 2,000 Demarest Bros. 1,500 21,000	SEPT. 21.—By the Corona=Liverpool: Poel & Arnold. 58,000 George A. Alden & Co. 11,500 Livesey & Co. 15,000 84,500	SEPT. 20.—By the Pathau=Singapore: Heabler & Co. 650,000 Poel & Arnold. 265,000 W. L. Gough & Co. 250,000 D. A. Shaw & Co. 225,000 M. Weschner & Co. 225,000 L. C. Hopkins Co. 110,000 1,725,000
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SEPT. 8.—By the Carmania=Liverpool: Livesey & Co. 11,000 George A. Alden & Co. 8,000 19,000	SEPT. 13.—By the Vadtland=Antwerp: Poel & Arnold. *25,000	Imports: India-rubber 2,399,394 \$3,151,023 Balata 25,999 13,241 Gutta-percha 82,371 10,649 Gutta-jelutong (Pontianak). 2,289,201 76,295 Total 4,796,965 \$3,251,208
SEPT. 9.—By the Pennsylvania=Hamburg: George A. Alden & Co. 10,000 W. L. Gough & Co. 2,000 12,000	SEPT. 13.—By the Minneapolis=London: General Rubber Co. *34,000 A. T. Morse & Co. *22,000 *56,000	Exports: India-rubber 314,202 \$324,493 Reclaimed rubber. 77,501 9,678 Rubber scrap, imported. 2,063,964 \$211,294
SEPT. 10.—By the Hudson=Havre: Poel & Arnold. 70,000 General Rubber Co. 11,000 Rubber Import Co. 7,000 88,000	SEPT. 15.—By the Kasama=Colombo: New York Commercial Co. *13,000 A. T. Morse & Co. *5,000 *18,000	BOSTON ARRIVALS. JULY 28.—By the Hohenfels=Colombo: George A. Alden & Co., Ceylon. 4,700
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CUSTOM HOUSE STATISTICS.		
PORT OF NEW YORK—AUGUST.		
Imports:	Pounds.	Value.
India-rubber	2,399,394	\$3,151,023
Balata	25,999	13,241
Gutta-percha	82,371	10,649
Gutta-jelutong (Pontianak).	2,289,201	76,295
Total	4,796,965	\$3,251,208
Exports:		
India-rubber	314,202	\$324,493
Reclaimed rubber.	77,501	9,678
Rubber scrap, imported.	2,063,964	\$211,294

BOSTON ARRIVALS.	
POUNDS.	
JULY 28.—By the Hohenfels=Colombo: George A. Alden & Co., Ceylon.	4,700
AUG. 2.—By the Crostafels=Colombo: George A. Alden & Co., Ceylon.	1,760
AUG. 12.—By the Kennebec=Singapore: Heabler & Co., Gutta-jelutong	258,800
George A. Alden & Co., Gutta-jelutong	250,000 508,800



Vol. 41.

OCTOBER 1, 1909.

No. 1.

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C. D. Frost

[With 5 Illustrations.]

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[With a Portrait.]

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Review of the Crude Rubber Market.....

London.

AUGUST 23.—At the regular fortnight auction of August 20 about 17¾ tons of Straits and 22¼ tons Ceylon plantation rubber were offered. The sale not being concluded, it was continued to-day. On the former date prices were slightly below those of the preceding auction, but to-day shows a recovery. Vallambrosa smoked sheet sold up to 8s. 1¼d. [= \$1.97.2] and Highlands to 7s. 11¼d. [= \$1.94]. Fine lots of very fine crepe sold at 7s. 9d. to 7s. 9½d. [= \$1.89.5]. Hard fine Pará sold at 8s. 3d. [= \$2.00.6].

SEPTEMBER 3.—At to-day's auction 100½ tons Straits and 12¾ tons Ceylon plantation were offered, a large proportion

of which found buyers at an advance of 4d. @ 8d. per pound over last sale quotations. The few parcels of smoked sheet on offer were again eagerly bid for and realized 8s. 5d. to 8s. 6d. [= \$2.06.8], the latter figure being paid for some of the highlands sheet. Rosehaugh crepe sold at 8s. 4d., and several other parcels of this grade fetched 8s. 3d. and over.

Gow, Wilson & Stanton, Limited, quote for plantation:

Sheet and Biscuits:				
Fine smoked sheet.....	8s.	5d.	@ 8s.	6d.
Good to fine sheet.....	8s.	0½d.	@ 8s.	3¼d.
Good to fine biscuits.....	8s.	0¼d.	@ 8s.	3¼d.
Crepe:				
Very pale.....	8s.	2d.	@ 8s.	4d.
Medium and palish.....	7s.		@ 7s.	1d.
Dark and brown.....	4s.	10d.	@ 6s.	10d.
Unwashed Scrap:				
Medium to fine.....	5s.	3d.	@ 5s.	8d.
Dark to low.....	2s.	7d.	@ 5s.	

Lewis & Peat report fine hard Pará at 8s. 2d. [= \$1.98.7].

SEPTEMBER 10.—The market during the past week has been steady, and a considerable business has been done, and to-day there is an active demand with business done at again higher prices. In plantation rubber, only a small business doing privately, as there is very little on offer. Fine hard Pará for September delivery up to 8s. 2d. [= \$1.98.6]. Next auction on Tuesday, September 21.

SEPTEMBER 17.—The market during the past week has been very excited, and a large business has been done. September hard fine Pará has sold up to 8s. 7d. [= \$2.08.8].

GOOD RUBBER FROM UGANDA.

Forty-five cases fine plantation smoked sheet sold at September auction at 8s. 2¼d. [= \$1.99].

AUGUST PLANTATION YIELDS (IN POUNDS).

	1908.	1909.
Anglo-Malay Rubber Co.....	30,207	47,183
Bukit Rajah Rubber Co.....		20,938
Consolidated Malay Rubber Estates.....	10,177	18,800
Damansara (Selangor) Rubber Co.....		24,600
Federated (Selangor) Rubber Co.....		8,433
Lanadron Rubber Estates.....	16,708	25,636
Ledbury Rubber Estates.....	1,150	6,580
London Asiatic Rubber and Produce Co.....	3,343	6,927
Malacca Rubber Plantations.....	4,000	25,000
Pataling Rubber Estates Syndicate.....	7,002	12,826
Perak Rubber Plantations.....	4,875	10,200
Sumatra Pará Rubber Plantation.....	6,384	9,360

Eight Months, Including August.

	1908.	1909.
Anglo-Malay.....	216,973	316,032
Damansara (Selangor).....	74,183	120,130
Lanadron.....	110,102	160,108
Ledbury.....	14,289	37,200
London Asiatic.....	17,407	40,127
Pataling.....	42,840	87,528
Sumatra Pará.....	42,732	58,470

RUBBER AUCTIONS—ALTERATIONS.

At a meeting of Rubber Brokers and Buyers on September 1 it was agreed that the auctions after this week will take place on Tuesdays, at 11 o'clock, and that catalogues are to be out and samples on show on the Monday previous by 10.30 a. m. Any rubber not shown by sample then, is not to be offered in the auction on the Tuesday.

The first Tuesday's auction will take place on September 14, and thereafter every fortnight.

That Brokers will bracket small lots together as much as possible, and suggest to their importers to advise the shippers not to send less than 2½ cwt. of each quality, now that the trade is so increasing, as small lots can be held back by the planters till they make a fresh shipment.

That the rule be to sell about 100 lots per hour in the auctions, and to advance ¼d. per pound at a time on Plantation rubber. All lots under 2 cwt. to be lotted in the catalogue as "Star Lots," and when not bracketed with other lots at the auction, to be offered at the conclusion of the other portion of the catalogues, or sold privately, whichever the selling broker decides.

The auctions will close at 5 p. m. on Tuesdays.

African Rubbers.

NEW YORK STOCKS (IN TONS).

September 1, 1908.....	133	April 1, 1909.....	178
October 1.....	134	May 1.....	268
November 1.....	134	June 1.....	156
December 1.....	179	July 1.....	268
January 1, 1909.....	156	August 1.....	130
February 1.....	157	September 1.....	123
March 1.....	200		

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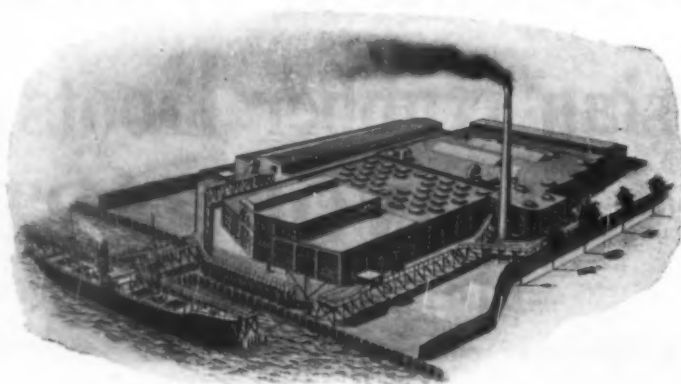
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A Government order by wire, Khartoum via Cairo (Egypt), 7th March, 1908: "Send 300,000 Ceara seed, 10,000 ditto stumps, 100,000 Hevea seed, 10,000 ditto stumps, 5,000 Castilloa seed."

An Agricultural Department order from Dutch West Indies, Paramaribo, 18th January, 1908: "Please send me as soon as you have fresh seed 90,000 (ninety thousand) seeds of Hevea Brasiliensis; your method of packing is all right; the seeds shipped last year to the Superintendent of the Botanic Garden arrived in good condition."

A planting Company's order by telegraph, Berlin, 7th March, 1908: "Please send 50,000 Hevea stumps, arrival in May, Hamburg Noerman Line, the purchase money to be paid on signing, and in exchange for documents Hong Kong & Shanghai Banking Corporation. Please confirm order."

A Surinam Planter's order who purchased 20,000 Hevea seeds last year, 17th February, 1908: "I now order from you 20,000 Hevea seeds to be sent by parcel post packed as before; please send selected seed from mature trees. The best results we got are from your seeds packed as above and sent by Parcel post."

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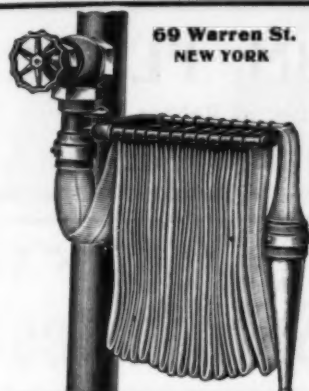
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SUPERINTENDENT.—Position wanted as superintendent or general foreman of rubber factory. Thoroughly understands all about druggists' sundries, mechanical supplies and all kinds of molded goods. Have had 20 years' experience. Can furnish the best of references. Address BOX NO. 57, care of THE INDIA RUBBER WORLD. (393)

WANTED.—Account on commission of rubber factory making line of mechanical goods. Address BOX 58, care of The India Rubber World. (394)

WANTED.—Position wanted by a young man with 10 years good general practical experience in rubber manufacturing. Can instruct and handle help, and would be competent to take charge of either press or mill room; would also be found capable as assistant to superintendent or manager. Desire to make change and connect with reliable concern. Address BOX NO. 59, care of THE INDIA RUBBER WORLD. (395)

CHEMIST AND COMPOUNDER.—Position wanted by experienced chemist and compounder of mechanical rubber goods. Familiar with mill room and department problems and troubles. Address C. L., care of THE INDIA RUBBER WORLD. (396)

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WANTED.—Position as sales manager with mechanical rubber factory. Best references. Address BOX No. 63, care of The India Rubber World. (401)

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FOREMAN.—Position desired with a company that will appreciate ability by a foreman with over 15 years' experience in the rubber covered insulated wire and cable business. Thoroughly familiar with all departments, including preparation of compounds, etc. Address G. B., care of THE INDIA RUBBER WORLD. (412)

CHEMICAL ENGINEER, graduate of the Massachusetts Institute of Technology, now employed as chemical engineer of a large organization, desires a position with a rubber concern. Have a good general knowledge of the rubber business, and have had considerable experience in the analysis and testing of rubber goods. Address CHEMICAL ENGINEER, care of THE INDIA RUBBER WORLD. (413)

WANTED.—Position as Manager or Superintendent of tire and rubber factory. American and foreign experience of over 20 years. Thoroughly competent. Address BOX No. 30, care of THE INDIA RUBBER WORLD. (317)

MANAGER.—German factory manager, speaking English fluently, wants similar position. Capable of manufacturing first-class cab tires, solid tires for omnibuses and pneumatic tires. Have excellent compounds and thorough experience in technical and surgical rubber goods. Best references. Address BOX NO. 54, care of THE INDIA RUBBER WORLD. (383)

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FOREMAN.—To take charge of press room. One who can watch overflows, handle men, and get out press work economically. A man who has had experience in making rubber tiling preferred. Reply, stating age, experience and salary expected. Address G. E. D., care of THE INDIA RUBBER WORLD. (404)

LARGE BRITISH FACTORY about to open branch in the United States requires thoroughly capable man to take charge. Must have had previous experience in similar lines. Only applicants with the highest credentials will be considered. Principal lines—shoes, automobile and solid tires, clothing, etc. Address BOX NO. 65, care of THE INDIA RUBBER WORLD. (405)

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WANTED.—An experienced tire builder thoroughly acquainted with the manufacture of automobile tires. In making application state experience. Address BOX NO. 67, care of THE INDIA RUBBER WORLD. (407)

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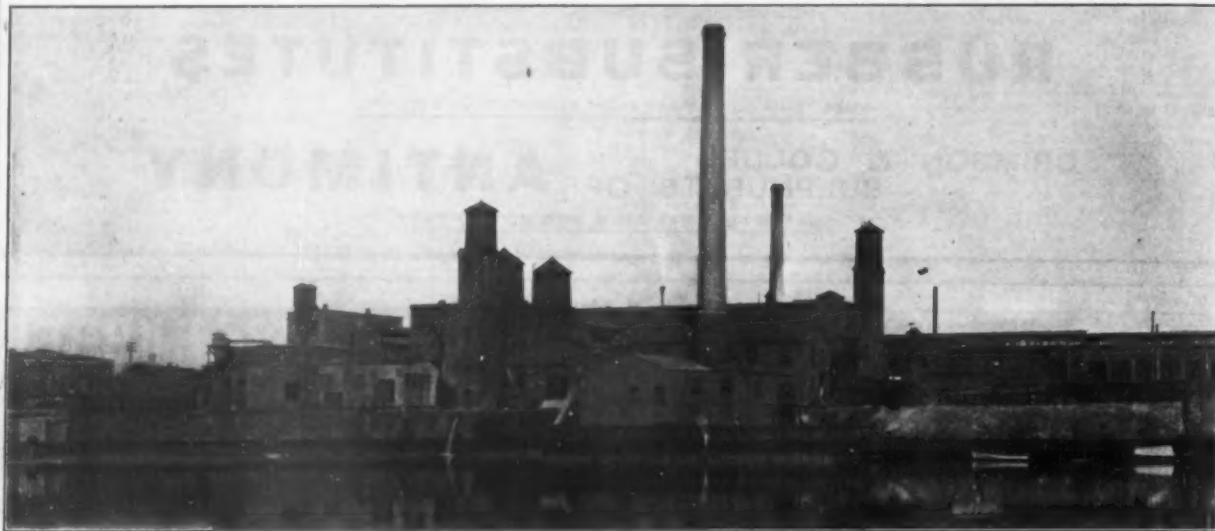
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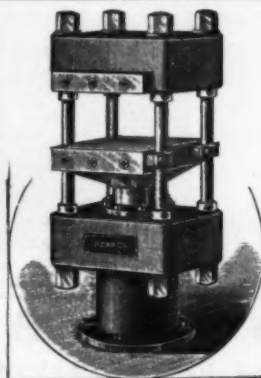
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From THE SCIENTIFIC AMERICAN, New York, June 17

CRUDE RUBBER AND COMPOUNDING INGREDIENTS. A Text-Book of Rubber Manufacture. By Henry C. Pearson, Editor of THE INDIA RUBBER WORLD. Second Edition. New York: The India Rubber Publishing Company, 1909.

This is the second edition of a book which appeared ten years ago, and which may be regarded as a standard work on the subject in English. Since the appearance of the first edition the rubber industry has made rapid strides. New sources of rubber have been opened up and progress has been made in reclaiming waste rubber. In this revised edition the improvements in the art have all been conscientiously noted. The many new compounding ingredients, substitutes and processes find a place in its pages. As it stands the book is a dictionary of compounding facts, and an encyclopedia of rubber factory practice, intended primarily for factory use.

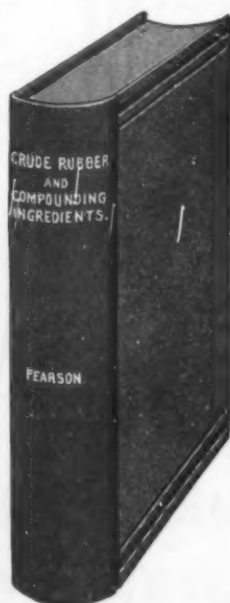
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THE INDIA RUBBER WORLD

395 Broadway, New York

From THE INDIA-RUBBER JOURNAL, London, June 28



The Index, in Pamphlet,
sent free on request

Mr. Henry C. Pearson's text-book on rubber manufacture, entitled "Crude Rubber and Compounding Ingredients," has now gone into its second edition. A copy of this production is before us and we anticipate a very large demand, for the compilation has been made more attractive than ever and has been brought up to date in every chapter. The first edition appeared ten years ago, and since that time many changes have been chronicled, especially the making of motor tires, which Mr. Pearson describes as a new development, occupying to-day one of the great divisions in the manufacture of rubber goods. New compounding ingredients and substitutes have naturally increased in number in the interval between the two editions, and in the present issue only those of a real or suggestive value have been utilized. As the author claims, it still remains a dictionary of compounding facts; an encyclopedia of rubber factory practice. Attention is drawn to the fact that for some years past the price of crude rubber has been high, and has consequently led manufacturers to inquire into the value of materials, such as Pontianak. Gums of this character are described in the volume before us. - - - There is an additional chapter in the second edition, making a total number of fifteen, which refers entirely to reclaimed rubber and its uses. In this section a brief account is given to the various processes adopted at the present time. - - - We congratulate Mr. Pearson on his second edition and feel that, though it was promised to us in December of last year, it has been well worth waiting for.

The Publishers' Page

A Score of Busy Years.

TWENTY years is a considerable period not only in the life of an individual, but of a business or industry. For example, twenty years mark practically one-third of the time since Charles Goodyear patented the vulcanizing process, the basis of the india-rubber business. Each twenty years has brought increased progress, and the latest two decades in rubber have shown more growth than double this time formerly. These last decades are to be reviewed in detail in the Twentieth Anniversary Number of THE INDIA RUBBER WORLD, now in preparation.

What Rubber is Doing for the World.

THERE is a wide range of topics of interest for this Twentieth Anniversary review. The benefit to the world, from a hygienic standpoint, from having at its disposal waterproof footwear and other apparel, is immeasurable in terms of money. A stronger and more capable human race has resulted, with a corresponding economic value. The building of great cities, with marked advantage to the world, has been vastly promoted by the improved means of protection against fire which the development of rubber hose has afforded. And today a most marked factor in civilization is the bringing of masses of people into closer communication as the automobile is doing, and the automobile would not have existed but for the india-rubber tire.

Some Features in Prospect.

IT is not practicable, in advance, to put forth a complete outline of the features now preparing for the Twentieth Anniversary Number. The Rubber Tire interest will be treated very fully, of course. In the matter of Fire Department equipment the part played by the rubber manufacturer will be studied. The great progress made in the Rubber Reclaiming industry, during twenty years will be recorded. The discovery within this period of New Sources of Rubber, of such importance to the whole industry, will also be treated at length. And this will be followed by a consideration of the new Rubber Planting interest. Every important new development in the rubber industry has been accompanied, of course, by improvements in Rubber Machinery, and these will be properly reviewed. Statistics of Rubber Production, which has increased enormously during twenty years, will be included, and of Rubber Prices, which have increased even more.

A Comprehensive Book in Brief.

THE foregoing are only a few illustrations of how the use of rubber is benefiting man. A list of all the products of the rubber industry, and of their applications, of advantage to the world, would fill a formidable book. But the whole subject

may be considered in brief with interest and profit to the various branches of the trade. Important as are the results attained already by those who work in rubber, the industry gives promise of even greater development, and the indications for the future will have attention in the forthcoming review.

To Mark an Epoch.

VERY many other topics of interests are planned to be embraced in the Twentieth Anniversary Number; the preceding items are mentioned only by way of suggestion. The idea will be, on the whole, to make this issue one to mark an epoch in the history both of the trade and of THE INDIA RUBBER WORLD—to serve as a valued work of reference until another occasion calls for a special issue, brought still further up to date.

An Advertising Opportunity.

THE advertising patrons of the paper may be interested to know that the Twentieth Anniversary Number—an issue containing an unusual amount of reading matter, and which will be given a specially large circulation—will afford a particularly good opportunity for bringing their products to the notice of the trade throughout the world.

For the Rubber Man's Library.

ANOTHER yearly bound volume of THE INDIA RUBBER WORLD has been completed—bringing the publication down to and including the issue of September 1, 1909. It is the largest volume of the paper yet produced in any one year, with a greater variety of contents. It is confidently offered to rubber men as worth much more than its price, as a record of progress of the industry and the trade—carefully prepared and accurate information, brought up to the date of publication, and in a form convenient for reference. The numerous illustrations are not the least important feature of the book. Price, \$5, delivered.

Report of a Rubber Congress.

A REMINDER of the International Rubber Exhibition in London last year comes in the shape of a substantial looking volume containing a very full report of the rubber congress held at the same time, showing evidence of scholarly editorship. There were rubber planters at the congress, people who buy and sell crude rubber whether wild or cultivated, and chemists whose work in rubber is of a practical character. A score of such men read papers or lectured at Olympia and what they said makes good reading. This is not a guide book to planting; it has to do rather with the characteristics of different rubbers, and how to produce them after the trees have been brought into existence. It is a good book for the rubber factory library. The price is \$3.

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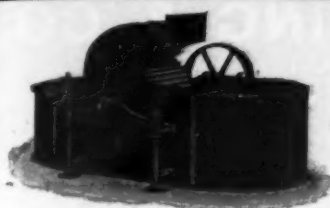
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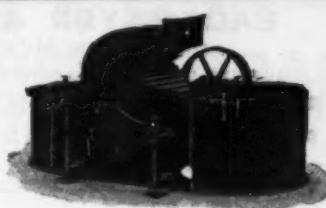
An obstruction encountered by a large wheel is less of an obstruction than one encountered by a small wheel; it is more easily surmounted; it produces less of a jolt and shakes the passengers less. Just as the road shock produced by an obstruction is magnified as the weight of the car encountering it is increased, so is it increased as the wheels are made smaller.

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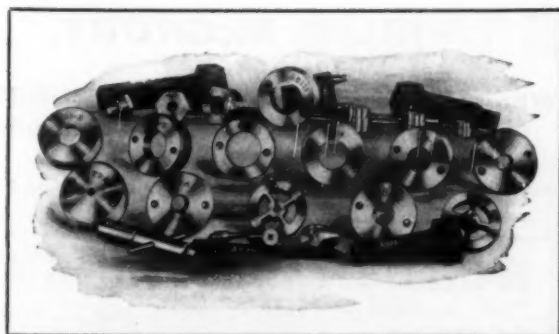
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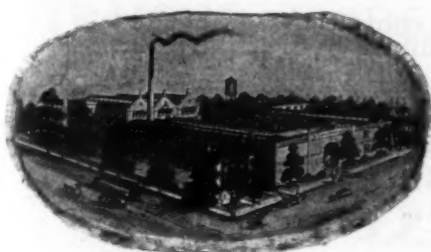
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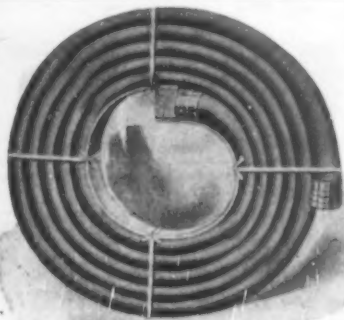
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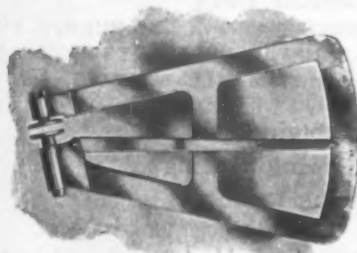
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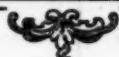
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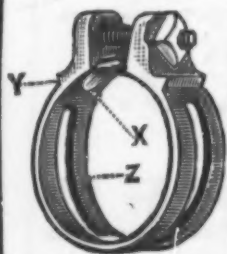
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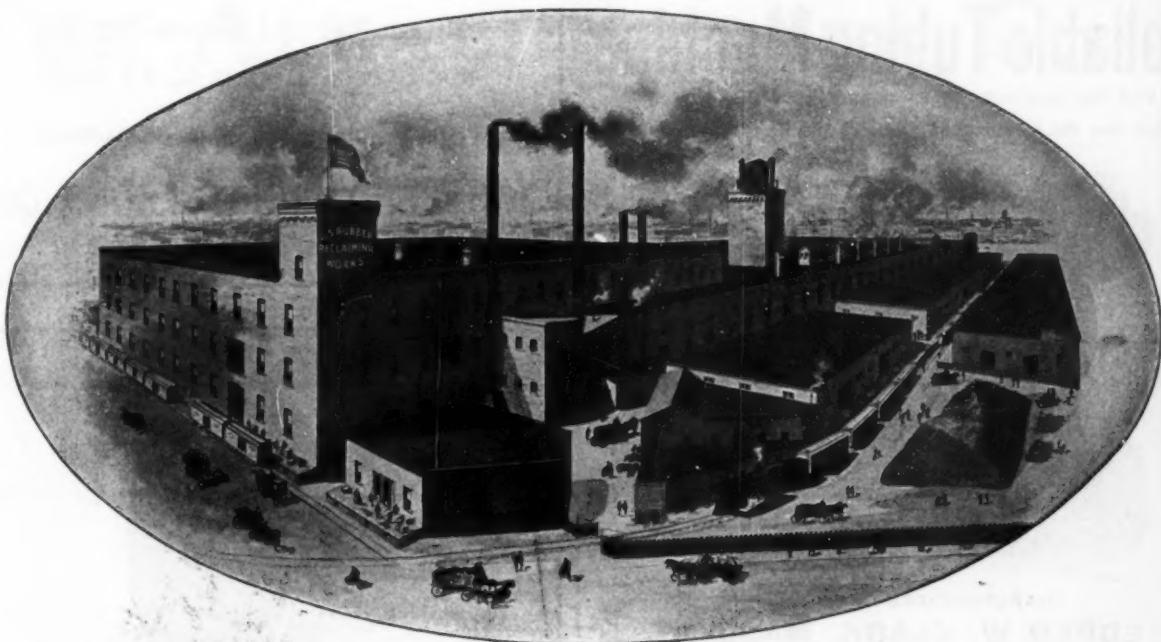
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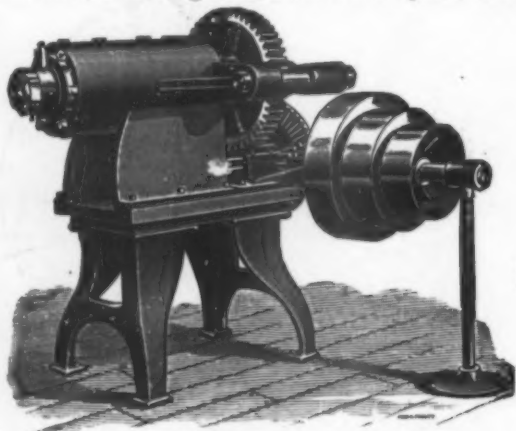
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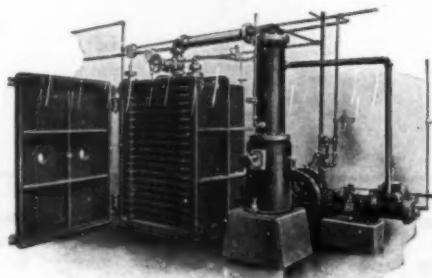
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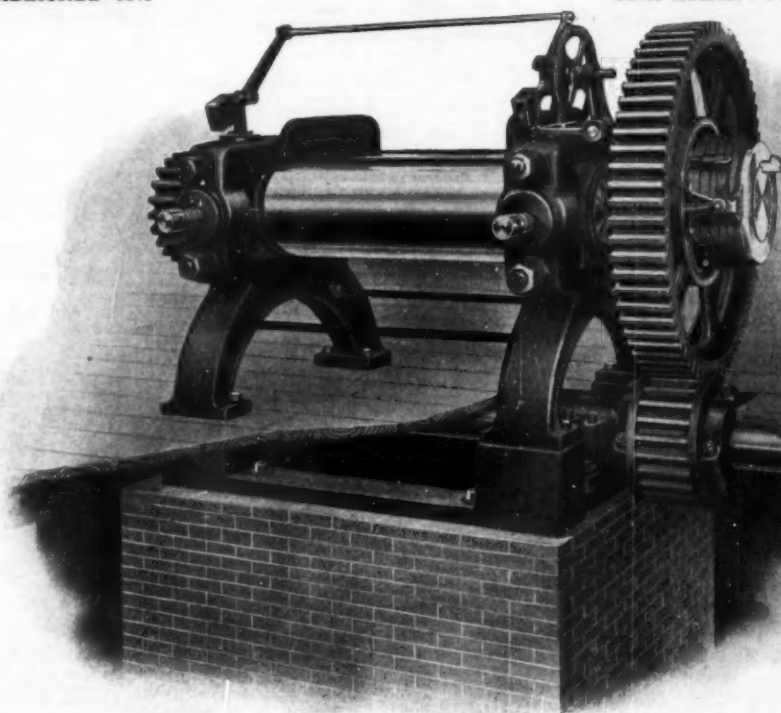
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 Voorhees Rubber Mfg. Co., Jersey City.

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 Manhattan Rubber Mfg. Co., New York.
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 Peerless Rubber Mfg. Co., New York.
 Republic Rubber Co., Youngstown, O.
 Revere Rubber Co., Boston—New York.
 Jos. Stokes Rubber Co., Trenton, N. J.
 Voorhees Rubber Mfg. Co., Jersey City.

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 Peerless Rubber Mfg. Co., New York.
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 N. J. Car Spring & Rubber Co., Jersey City.
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 Peerless Rubber Mfg. Co., New York.
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 Voorhees Rubber Mfg. Co., Jersey City.

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 Canadian Rubber Co. of Montreal.
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 Continental Rubber Works, Erie, Pa.
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New York Rubber Co., New York.
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Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
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B. F. Goodrich Co., Akron, O.
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Daval Rubber Co., Providence, R. I.
Mattson Rubber Co., Lodi, N. J.
Plymouth Rubber Co., Stoughton, Mass.
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Tyer Rubber Co., Andover, Mass.
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Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.

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Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
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Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Western Rubber Works, Goshen, Ind.

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Mattson Rubber Co., Lodi, N. J.

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New York Belting & Packing Co., Ltd., New York.

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Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
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Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Canton Rubber Co., Canton, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Huron Rubber Co., Cleveland, O.
Luzerne Rubber Co., Trenton, N. J.
Mass. Chemical Co., Walpole, Mass.
National India Rubber Co., Bristol, R. I.
Parker, Stearns & Co., N. Y.
Pirelli & Co., Milan, Italy.
Rubber Products Co., Barberton, O.
Seamless Rubber Co., New Haven, Ct.
Star Rubber Co., Akron, O.
Tyer Rubber Co., Andover, Mass.
Walpole Rubber Co., Walpole, Mass.
Walpole Rubber Works, Walpole, Mass.
Western Specialty Mfg. Co., N. Y.

Balls, Dolls and Toys.

New York Rubber Co., New York.
Combination Fountain Syringe and Hot Water Bottle Fixtures.

A. Schrader's Son, Inc., N. Y.

Combs.

American Hard Rubber Co., New York.

Elastic Bands.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York-Boston.
Tyer Rubber Co., Andover, Mass.

Erasive Rubbers.

Davidson Rubber Co., Boston.

B. F. Goodrich Co., Akron, O.

Finger Cots.

Canton Rubber Co., Canton, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence.
Faultless Rubber Mfg. Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Huron Rubber Co., Cleveland, O.
The Rubber Products Co., Barberton, O.

Gloves.

Canadian Rubber Co. of Montreal.
Canton Rubber Co., Canton, O.
Daval Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
Rubber Products Co., Barberton, O.

Hard Rubber Goods.

American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
H. O. Canfield Co., Bridgeport, Ct.
Daval Rubber Co., Providence, R. I.
Luzerne Rubber Co., Trenton, N. J.
Stokes Rubber Co., Joseph, Trenton, N. J.
Tyer Rubber Co., Andover, Mass.

Hospital Sheetings.

Bishop Gutta Percha Co., N. Y.
Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Hot Water Bottle Stopples.

A. Schrader's Son, Inc., N. Y.

Ice Bags and Ice Caps.

Canton Rubber Co., Canton, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
The Rubber Products Co., Barberton, O.
Tyer Rubber Co., Andover, Mass.

Life Preservers.

Daval Rubber Co., Providence.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Shower Bath Sprinklers.

Daval Rubber Co., Providence.

A. Schrader's Son, Inc., New York.

Sponges (Rubber).

Faultless Rubber Co., Ashland, O.
N. Tire Rubber Sponges Co., Chicago.

Stationers' Sundries.

American Hard Rubber Co., New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York-Boston.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass.

Stopples (Metal).

A. Schrader's Son, Inc., N. Y.

Stopples (Rubber).

Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
Erie Rubber Works, Erie, Pa.
Hodgman Rubber Co., New York.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
Tyer Rubber Co., Andover, Mass.

Throat Bags.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
Daval Rubber Co., Akron, O.
National India Rubber Co., Bristol, R. I.
Tyer Rubber Co., Andover, Mass.

Tobacco Pouches.

Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
The Rubber Products Co., Barberton, O.
Tyer Rubber Co., Andover, Mass.

MACKINTOSHED AND SURFACE GOODS.

Air Goods (Rubber).

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
New York Rubber Co., New York.
National India Rubber Co., Providence.
Rubber Products Co., Barberton, O.
Tyer Rubber Co., Andover, Mass.

Air Mattresses.

Canadian Rubber Co. of Montreal.
Mechanical Fabric Co., Providence, R. I.
National India Rubber Co., Bristol, R. I.

Barbers' Bibs.

Cleveland Rubber Co., Cleveland, O.

Daval Rubber Co., Providence, R. I.

Tyer Rubber Co., Andover, Mass.

Bathing Caps.

Daval Rubber Co., Providence, R. I.

B. F. Goodrich Co., Akron, O.

Rubber Products Co., Barberton, O.

Bellows Cloths.

Boston Rubber Co., Boston.

Cleveland Rubber Co., Cleveland, O.

Hodgman Rubber Co., New York.

Calendering.

Plymouth Rubber Co., Stoughton, Mass.

Carriage Ducks and Drills.

Acme Rubber Mfg. Co., Trenton, N. J.

Cleveland Rubber Co., Cleveland, O.

Empire Rubber Mfg. Co., Trenton, N. J.

Gutta Percha & Rubber Mfg. Co., Toronto.

Clothing.

Canadian Rubber Co. of Montreal.

Cleveland Rubber Co., Cleveland, O.

Gutta Percha & Rubber Mfg. Co. of Toronto.

Hodgman Rubber Co., New York.

National India Rubber Co., Bristol, R. I.

Pirelli & Co., Milan, Italy.

Cravenette.

Cravenette Co., Ltd.

Diving Apparatus.

A. Schrader's Son, Inc., New York.

Hodgman Rubber Co., New York.

Horse Covers.

Hodgman Rubber Co., New York.

National India Rubber Co., Bristol, R. I.

Leggings.

Cleveland Rubber Co., Cleveland, O.

Hodgman Rubber Co., New York.

National India Rubber Co., Bristol, R. I.

Mackintoshes.

(See Clothing.)

Proofing.

Canadian Rubber Co. of Montreal.

Plymouth Rubber Co., Stoughton, Mass.

Rain Coats.

Cravenette Co., Ltd.

Rubber Coated Cloths.

Mechanical Fabric Co., Providence, R. I.

RUBBER FOOTWEAR

Boots and Shoes.

American Rubber Co., Boston.

Boston Rubber Shoe Co., Boston.

Canadian Rubber Co. of Montreal.

L. Candee & Co., New Haven, Conn.

B. F. Goodrich Co., Akron, O.

Gutta Percha & Rubber Mfg. Co. of Toronto.

Hood Rubber Co., Boston.

Lycorning Rubber Co., Williamsport, Pa.

Meyer Rubber Co., New York.

National India Rubber Co., Boston.

United States Rubber Co., New York.

Wales-Goodyear Rubber Co., Boston.

Woonsocket Rubber Co., Providence.

Heels and Soles.

B. & R. Rubber Co., No. Brookfield, Mass.

Boston Woven Hose & Rubber Co.

Canadian Rubber Co. of Montreal.

Continental Caoutchouc & Gutta Percha Co., Hanover.

Foster Rubber Co., Boston.

The Gutta Percha & Rubber Mfg. Co. of Toronto, Ltd.

Massachusetts Chemical Co., Walpole, Mass.

Plymouth Rubber Co., Stoughton, Mass.

Western Rubber Works, Goshen, Ind.

Tennis Shoes.

American Rubber Co., Boston.

Boston Rubber Shoe Co., Boston.

The Gutta Percha & Rubber Mfg. Co. of Toronto, Ltd.

National India Rubber Co., Providence.

United States Rubber Co., New York.

Wading Pants.

Canadian Rubber Co. of Montreal.

Hodgman Rubber Co., New York.

DENTAL AND STAMP RUBBER.

Dental Gum.

American Hard Rubber Co., New York.

Cleveland Rubber Co., Cleveland, O.

Tyer Rubber Co., Andover, Mass.

Rubber Dam.

Cleveland Rubber Co., Cleveland, O.

Davidson Rubber Co., Boston.

Daval Rubber Co., Providence, R. I.

B. F. Goodrich Co., Akron, O.

Hodgman Rubber Co., New York.

Tyer Rubber Co., Andover, Mass.

Stamp Gum.

B. F. Goodrich Co., Akron, O.

Mattson Rubber Co., Lodi, N. J.

Mechanical Rubber Co., Chicago, Ill.

N. J. Car Spring & Rubber Co., Jersey City, N. J.

New York Belting & Packing Co., N. Y.

ELECTRICAL.

Electrical Supplies.

American Hard Rubber Co., New York.

Joseph Stokes Rubber Co., Trenton, N. J.

Massachusetts Chemical Co., Boston.

Mattson Rubber Co., Lodi, N. J.

Tyer Rubber Co., Andover, Mass.

Friction Tape.

Acme Rubber Mfg. Co., Trenton, N. J.

Boston Belting Co., Boston.

Boston Woven Hose & Rubber Co.

Canadian Rubber Co. of Montreal.

Cleveland Rubber Co., Cleveland, O.

B. F. Goodrich Co., Akron, O.

Home Rubber Co., Trenton, N. J.

Massachusetts Chemical Co., Boston.

Mechanical Rubber Co., Chicago.

National India Rubber Co., Bristol, R. I.

Revere Rubber Co., Boston-New York.

Hard Rubber Goods.

American Hard Rubber Co., New York.

Canadian Rubber Co. of Montreal.

Luzerne Rubber Co., Trenton, N. J.

Joseph Stokes Rubber Co., Trenton, N. J.

RUBBER BUYERS' DIRECTORY—Continued.

Insulating Compounds. Bishop Gutta Percha Co., N. Y. Canadian Rubber Co. of Montreal. Gutta Percha & Rubber Mfg. Co., Toronto. Massachusetts Chemical Co., Boston. Insulated Wire and Cables. Acme Rubber Mfg. Co., Trenton, N. J. Bishop Gutta Percha Co., N. Y. W. E. Briley, New York. The Indiana Rubber and Insulated Wire Co., Jonesboro, Ind. National India Rubber Co., Providence. Insulated Wire Waxes. American Wax Co., Boston. Splicing Compounds. Boston W. H. & R. Co., Boston. House Rubber Co., Trenton, N. J. Massachusetts Chemical Co., Walpole, Mass.	Faultless Rubber Co., Akron, O. B. F. Goodrich Co., Akron, O. Hodgman Rubber Co., New York. National India Rubber Co., Bristol, R. I. Golf Balls. Boston Belting Co., Boston. Canadian Rubber Co. of Montreal. Davidson Rubber Co., Boston. B. F. Goodrich Co., Akron, O. The Gutta Percha & Rubber Mfg. Co. of Toronto, Ltd. Sporting Goods. Canadian Rubber Co. of Montreal. Faultless Rubber Co., Akron, O. B. F. Goodrich Co., Akron, O. Hodgman Rubber Co., New York. Tyer Rubber Co., Andover, Mass. Striking Bags. Canadian Rubber Co. of Montreal. Cleveland Rubber Co., Cleveland, O. Faultless Rubber Co., Akron, O. B. F. Goodrich Co., Akron, O. Rubber Products Co., Barborton, O. Submarine Outfits. Hodgman Rubber Co., New York. A. Schrader's Sons, Inc., New York.	MISCELLANEOUS. Boxes (Wood). Henry H. Shelp & Co., Philadelphia. Brass Fittings. A. Schrader's Son, New York. Cement (Rubber). Boston Belting Co., Boston. Canadian Rubber Co. of Montreal. B. F. Goodrich Co., Akron, O. Manhattan Rubber Mfg. Co., New York. Massachusetts Chemical Co., Walpole, Mass. N. J. Car Spring & Rubber Co., Jersey City, N. J. New York Belting & Packing Co., N. Y. Chemists. Chute, H. O., New York. Maywald, F. J., New York. Stephen P. Sharples, Boston, Mass.	Consulting Engineers. Akron Rubber Engineering Co., Akron, O. M. P. Fillingham, New York. Rubber Journals. Gummi-Zeitung, Dresden, Germany. L'Agriculture des Pays Chauds, France. Rubber Tree Seeds. J. P. William & Bros., Heneratgoda, Ceylon. Tapping Tools. G. Van den Kerckhove, Brussels, Belgium. Valves for Air Goods. A. Schrader's Son, Inc., New York.
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MACHINERY AND SUPPLIES FOR RUBBER MILLS.

RUBBER MACHINERY.

Acid Tanks. Birmingham Iron Foundry, Derby, Conn. Band Cutting Machines. A. Adamson, Akron, O. Birmingham Iron Foundry, Derby, Conn. Belt Folding Machines. Birmingham Iron Foundry, Derby, Conn. Farrel Foundry & Mach. Co., Ansonia, Conn. Belt Slitters. Cloth Dryers. Gearing. Shafting. Wrapping Machines. Birmingham Iron Foundry, Derby, Conn. Farrel Foundry & Mach. Co., Ansonia, Conn. Belt Stretchers. Birmingham Iron Foundry, Derby, Conn. Farrel Foundry & Mach. Co., Ansonia, Conn. Hoggson & Pettis Mfg. Co., New Haven. Boilers. William R. Thropp, Trenton, N. J. John E. Thropp & Sons Co., Trenton, N. J. Braiders. New England Butt Co., Providence, R. I. Calenders. Birmingham Iron Foundry, Derby, Conn. David Bridge & Co., Castleton, Manchester, Eng. Farrel Foundry & Mach. Co., Ansonia, Conn. Textile-Finishing Machinery Co., Providence, R. I. Castings. A. Adamson, Akron, O. Birmingham Iron Foundry, Derby, Conn. Farrel Foundry & Mach. Co., Ansonia, Conn. Chucks (Lathe). Hoggson & Pettis Mfg. Co., New Haven. Churns. American Tool & Machine Co., Boston. Clutches. Farrel Foundry & Mach. Co., Ansonia, Conn. Crackers. Birmingham Iron Foundry, Derby, Conn. Devulcanizers. Biggs Boiler Works Co., Akron, O. Birmingham Iron Foundry, Derby, Conn.	Edred W. Clark, Hartford, Conn. John E. Thropp & Sons Co., Trenton, N. J. William R. Thropp, Trenton, N. J. Dies. Hoggson & Pettis Mfg. Co., New Haven. Doubling Machines. American Tool & Machine Co., Boston. Drying Machines. Buffalo Foundry & Machine Co., Buffalo, N. Y. David Bridge & Co., Castleton, Manchester, Eng. Joseph P. Devine, Buffalo, N. Y. Birmingham Iron Foundry, Derby, Conn. Textile-Finishing Machinery Co., Providence, R. I. Embossing Calenders. Textile-Finishing Machinery Co., Providence, R. I. Engine Steam. William R. Thropp, Trenton, N. J. John E. Thropp & Sons Co., Trenton, N. J. Engraving Rolls. Hoggson & Pettis Mfg. Co., New Haven. Grinders and Mixers. Birmingham Iron Foundry, Derby, Conn. Farrel Foundry & Mach. Co., Ansonia, Conn. John E. Thropp & Sons Co., Trenton, N. J. William R. Thropp, Trenton, N. J. Hangers. Farrel Foundry & Mach. Co., Ansonia, Conn. Hose Machines. A. Adamson, Akron, O. Birmingham Iron Foundry, Derby, Conn. New England Butt Co., Providence, R. I. Hydraulic Accumulators. Birmingham Iron Foundry, Derby, Conn. Farrel Foundry & Mach. Co., Ansonia, Conn. John E. Thropp & Sons Co., Trenton, N. J. Insulating Machinery. John Boyle & Sons, Paterson, N. J. Lathes—Hard Rubber. A. Adamson, Akron, O. Lathes—Jar Ring. A. Adamson, Akron, O. Birmingham Iron Foundry, Derby, Conn. John E. Thropp & Sons Co., Trenton, N. J. William R. Thropp, Trenton, N. J. Machinists' Tools. Hoggson & Pettis Mfg. Co., New Haven.
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Moulds. A. Adamson, Akron, O. Birmingham Iron Foundry, Derby, Conn. Continental Rubber Works, Erie, Pa. Hoggson & Pettis Mfg. Co., New Haven. John E. Thropp & Sons Co., Trenton, N. J. Williams Foundry & Machine Co., Akron, O. Pillow Blocks. Farrel Foundry & Mach. Co., Ansonia, Conn. Presses (for Rubber Work). A. Adamson, Akron, O. Birmingham Iron Foundry, Derby, Conn. Boomer & Boschert Press Co., Syracuse, N. Y. Edred W. Clark, Hartford, Conn. Farrel Foundry & Mach. Co., Ansonia, Conn. William R. Perrin & Co., Chicago, Ill. John E. Thropp & Sons Co., Trenton, N. J. William R. Thropp, Trenton, N. J. Williams Foundry & Machine Co., Akron, O. Pumps. Birmingham Iron Foundry, Derby, Conn. Boomer & Boschert Press Co., Syracuse, N. Y. Farrel Foundry & Mach. Co., Ansonia, Conn. Racks for Boot and Shoe Cars. Hoggson & Pettis Mfg. Co., New Haven. Reducing Valves. Mason Regulator Co., Boston. Rollers (Hand). Hoggson & Pettis Mfg. Co., New Haven. Rubber Covering Machines. New England Butt Co., Providence, R. I. Separators. Turner, Vaughn & Taylor Co., Cuyahoga Falls, O. Spreaders. American Tool & Machine Co., Boston. Birmingham Iron Foundry, Derby, Conn. New England Butt Co., Providence, R. I. Steam Traps and Specialties. Jenkins Bros., New York. Mason Regulator Co., Boston. Steel Stamps. Hoggson & Pettis Mfg. Co., New Haven. Stichers (Hands). Hoggson & Pettis Mfg. Co., New Haven. Strip Covering Machines. Strip Cutters. New England Butt Co., Providence, R. I.	Tire Molds. John E. Thropp & Sons Co., Trenton, N. J. Williams Foundry & Machine Co., Akron, O. Tubing Machines. A. Adamson, Akron, O. Edred W. Clark, Hartford, Conn. John Boyle & Sons, Paterson, N. J. Williams Foundry & Machine Co., Akron, O. Vacuum Drying Chambers. Buffalo Foundry & Machine Co., Buffalo, N. Y. Joseph P. Devine Co., Buffalo, N. Y. Varnishing Machines. Birmingham Iron Foundry, Derby, Conn. Vulcanizers. Biggs Boiler Works Co., Akron, O. Birmingham Iron Foundry, Derby, Conn. Farrel Foundry & Mach. Co., Ansonia, Conn. John E. Thropp's Sons Co., Trenton, N. J. William R. Thropp, Trenton, N. J. Washers. Birmingham Iron Foundry, Derby, Conn. David Bridge & Co., Castleton, Manchester, Eng. Farrel Foundry & Machine Co., Ansonia, Conn. John E. Thropp & Sons Co., Trenton, N. J. William R. Thropp, Trenton, N. J. Turner, Vaughn & Taylor Co., Cuyahoga Falls, O. Wire Insulating Machines. New England Butt Co., Providence, R. I. John Boyle & Sons, Paterson, N. J.
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SECOND-HAND MACHINERY.

W. C. Coleman Co., Boston.
 Philip McGrory, Trenton, N. J.
 M. Norton & Co., Charlestown, Mass.

FACTORY SUPPLIES.

Aluminum Flake.
 Aluminum Flake Co., Akron, O.
Antimony, Sulphurets of.
 Golden.
 Actien-Ges. Georg Egestorf's Salzweske
 Linden, Germany.
 Atlas Chemical Co., Newtonville, Mass.
 Avery Chemical Co., Boston.
 Golden and Grimsen.
 Joseph Cantor, New York.
 Golden and Grimsen.
 Wm. H. Scheel, New York.

MACHINERY AND SUPPLIES FOR RUBBER MILLS—Continued.**Antimony, Sulphurets of.—Continued.****Artificial Rubber.**

National Co., Chicago.
Stamford (Conn.) Rubber Supply Co.
Type & King, London, England.

Balata.

George A. Alden & Co., Boston.

Barytes.

Avery Chemical Co., Boston.
Gabriel & Schall, New York.

Benzol.

Avery Chemical Co., Boston.
Barrett Mfg. Co., Philadelphia.
Samuel Cabot, Boston.

Black Hypo.

Joseph Cantor, New York.
William H. Scheel, New York.
Type & King, London, England.

Carbon Bisulphide.

George W. Speaight, New York.

Chemicals.

George W. Speaight, New York.
S. P. Wetherill Co., Philadelphia, Pa.

Colors.

Joseph Cantor, New York.
William H. Scheel, New York.
Type & King, London, England.
S. P. Wetherill Co., Philadelphia, Pa.

Crude Rubber.

George A. Alden & Co., Boston.
W. C. Coleman Co., Boston.
Wallace L. Gough Co., New York.
Hagermeyer & Brunn, New York.
Adolph Hirsch & Co., New York.
Rubber Trading Co., New York-Boston.

Dermatine.

De Dermatine Co., London.
Ducks and Drills (Cotton).
J. H. Lane & Co., New York.

Fossil Flour.

Oxford-Tripoli Co., Ltd., N. Y.

Gilsonite.

William H. Scheel, New York.

Graphite Grease.

Jon. Dixon Crucible Co., Jersey City.

Guayule Rubber.

Continental Rubber Co.

Ed. Maurer, New York.

Gutta-Percha.

Bishop Gutta Percha Co., N. Y.
George A. Alden & Co., Boston.
W. C. Coleman Co., Boston.
Rubber Trading Co., New York-Boston.

Hydro-Carbon Products.

Geo. A. Alden & Co., Boston.
American Wax Co., Boston.
William H. Scheel, New York.
Raven Mining Co., Chicago.

Infusorial Earth.

Oxford-Tripoli Co., Ltd., N. Y.
Stamford (Conn.) Rubber Supply Co.

Iron Oxide.

Avery Chemical Co., Boston.

Kapak.

Raven Mining Co., Chicago.

Lampblack.

Samuel Cabot, Boston.

Lead—Blue.**Lead—Sublimed White.**

Picher Lead Co., Chicago, Ill.

Lithopone.

Avery Chemical Co., Boston.

Gabriel & Schall, New York.

Mineral Rubber.

Geo. A. Alden & Co., Boston.

American Wax Co., Boston.

Paris White and Whiting.

Queensgate Whiting Co., Ltd.

H. F. Taintor Mfg. Co., New York.

Reclaimed Rubber.

Alkali Rubber Co., Akron, O.
F. H. Appleton & Son, Boston.
Bloomington (N. J.) Soft Rubber Co.
E. H. Clapp Rubber Co., Boston, Mass.
W. C. Coleman Co., Boston.
Continental Rubber Works, Erie, Pa.
Danversport Rubber Co., Boston.
Derby Rubber Co., Derby, Conn.
Eastern Rubber Co., New York.
Manufacturers' Co., Phila., Pa.
New Jersey Rubber Co., Lambertville, N. J.

Pequannoc Rubber Co., Butler, N. J.
Philadelphia Rubber Works, Philadelphia.
Rickaby Rubber Mfg. Co., South Framingham, Mass.
Rothschild, H., New York.
Stockton Rubber Co., Stockton, N. J.
Jos. Stokes Rubber Co., Trenton, N. J.
S. & L. Rubber Co., Chester, Pa.
U. S. Rubber Co., Chester, Pa.
U. S. Rubber Reclaiming Works, N. Y.
Westmoreland Rubber Mfg. Co., Grapeville, Pa.

Agents and Dealers.

Philip McGrory, Trenton, N. J.
H. P. Moorhouse, Paris, France.
Rubber Trading Co., New York-Boston.
Wm. Somerville's Sons, Liverpool.

Rubber Flux.

Massachusetts Chemical Co., Walpole, Mass.

Rubber Makers White.

Grasselli Chemical Co., N. Y.

Scrap Rubber.

Bers & Co., Philadelphia.
S. Birkenstein & Sons, Chicago.
W. C. Coleman Co., Boston.
Wm. H. Cummings & Sons, New York.
Theodore Hofeller & Co., Buffalo, N. Y.
M. Kaufman, Chicago.
B. Leventhal & Co., New York and Chicago.
Philip McGrory, Trenton, N. J.
Meyer Bros., Philadelphia, Pa.

M. Norton & Co., Charlestown, Mass.
J. Schuurmann, London.
Schwab & Co., Philadelphia.
Trenton Scrap Rubber Supply Co., Trenton, N. J.
United States Waste Rubber Co., Brockton, Mass.
M. J. Wolpert, Odessa, Russia.
B. A. Zacks & Sons, Erie, Pa.

Substitute.

T. C. Ashley & Co., Boston.
Joseph Cantor, New York.
Carter, Bell Mfg. Co., New York.
Corn Products Refining Co., New York.
Massachusetts Chemical Co., Boston.
The Rubber Chemical Co., Birmingham, England.
Wm. H. Scheel, New York.
Stamford (Conn.) Rubber Supply Co.
Type & King, London, England.
Wing & Co., C. S., Wollaston, Mass.

Sulphur.

Battelle & Renwick, New York.
T. & S. C. White Co., New York.

Sulphur Chloride.

William H. Scheel, New York.
George W. Speaight, New York.
Stamford (Conn.) Rubber Supply Co.

Tripoli.

Oxford-Tripoli Co., Ltd., N. Y.

Waxes.

American Wax Co., Boston.

Whiting.

H. F. Taintor Mfg. Co., New York.

Zinc Oxide of.

New Jersey Zinc Co., New York.

Zinc Substitute.

Aluminum Flake Co., Akron, O.

Zinc Sulphide.

Joseph Cantor, New York.
Type & King, London, England.

BUYERS' DIRECTORY**FOR RUBBER TIRES AND ACCESSORIES.****Auto Top Fabrics.**

Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Fabrics.

Hewins, E. D., Boston.
Lane & Co., J. H., New York.
National India Rubber Co., Bristol, R. I.

Insulated Wires.

The Indiana Rubber and Insulated Wire Co., Jonesboro, Indiana.

National India Rubber Co., Bristol, R. I.

Mats, Automobile.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co., Cambridge, Mass.

The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.

Manhattan Rubber Mfg. Co., New York.
Massachusetts Chemical Co., Walpole, Mass.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston, Mass.

Repair Stock.

Manhattan Rubber Mfg. Co., Passaic, N. J.
Mattson Rubber Co., Lodi, N. J.
Thermoid Rubber Co., Trenton, N. J.

Rims, Wheel.

Goodrich Co., B. F., Akron, Ohio.

Tires.

Bailey & Co., C. J., Boston, Mass.
Canadian Rubber Co., of Montreal, Ltd.
Continental Caoutchouc Co., New York.
Continental Rubber Works, Erie, Pa.
Dunlop Tire & Rubber Goods Co., Toronto.
Empire Rubber Mfg. Co., Trenton, N. J.
Goodrich Co., B. F., Akron, Ohio.
Gutta Percha & Rubber Mfg. Co., Toronto.
The Indiana Rubber and Insulated Wire Co., Jonesboro, Indiana.
Kokomo Rubber Co., Kokomo, Ind.
Mattson Rubber Co., Lodi, N. J.
Morgan & Wright, Detroit, Mich.
Pirelli & Co., Milan, Italy.

Springfield Tire & Rubber Co., Springfield, O.
Plymouth Rubber Co., Stoughton, Mass.
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